A BZ Media Publication

SD Times
SOFTWARE DEVELOPMENT
The Industry Newspaper for Software Development Managers

JUNE 15, 2006 • ISSUE NO. 152 www.sdtimes.com • $7.95

SD Times Photo: Alex Handy

Schwartz, in his new role as Sun's CEO, takes center stage at JavaOne.

Sun Promises To Open Java, Without Details

BY ALEX HANDY

SAN FRANCISCO — Java's going open source. Sun Microsystems will or won't resort to layoffs to stem its losses, depending upon which Sun executive is speaking, and Scott McNealy has widened his focus from Sun to become an evangelist for the Java community.

Those were the highlights from Sun at the 11th annual JavaOne Conference held here last month.

Jonathan Schwartz took center stage for the first time in his new role as CEO, but spoke only briefly at the conference, handing over much of the keynote duties to newly appointed executive vice president of software Rich Green and vice president of Java developer platforms group Jeff

COMPLETE JAVAONE COVERAGE PAGE 14

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Borland Sees JBuilder's Future; Fate Uncertain

As investors are vetted, DTG carries on as usual

BY P.J. CONNOLLY

Borland's Developer Tools Group (DTG) is planning for a productive future in whatever form its new management may take. Two updates to JBuilder 2006 are due this year, while the Eclipse-focused JBuilder 2007—code-named Peloton—should ship by year's end.

Meanwhile, potential investors for the spin-off of DTG are lining up, and due diligence is under way, according to Rob Cheng, the director of product marketing for developer solu-

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Another Try At Mobile Singularity

BY P.J. CONNOLLY AND EDWARD J. CORREIA

The irony should be obvious. Motorola, Nokia and Sun Microsystems are engaged in separate efforts to solve the problem of fragmentation in the mobile device software industry.

Motorola came into the JavaOne conference last month with a one-two punch. The company announced a new open-source initiative affiliated with Motodev, a developer network with the goal of combining what is currently a hodgepodge of support resources.

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RSSBus Takes Middleware To the Nth Degree

N Software is latest to try for universal API

BY EDWARD J. CORREIA

Is universal middleware—a system that enables a single API for any and all applications and data sources—really possible?

Gent Hito thinks so. The president and CEO of N Software in May demonstrated to SD Times the first beta of RSSBus, a simple approach to application and data integration that uses Really Simple Syndication 2.0 specifications to "normalize" the APIs of literally any application, system, data source or Web service.

"This lets you create an RSS feed from anything, like a service bus for the masses," said Hito. "The idea is to make your data available as a single format that anything can read, to build your apps on top of. Then anything can change on the back end without affecting what the customer sees."

At least one analyst advised caution. "The connectivity part we've overcome, but what about the governance piece?" asked Frank Kenney, principal analyst for research, application integration and emerging technologies at Gartner. "I'm sending a name and credit-card number to get it validated. How do I know which

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SD Times Photo Illustration: Erin Broadhurst

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Microsoft

The Power of Windows Embedded is in our Listening Stations

Robert Fort of Virgin Entertainment Group knows what his customers want; quick access to any CD, DVD, or game in the Virgin Megastore inventory. The new Virgin Vault, running on IBM Anyplace Kiosks, can deliver that, and much more. Besides being great for customers, the Virgin Vault system was economical to deploy. Because of the out-of-the-box functionality and Plug-n-Play device driver support built in to Windows Embedded for Point of Service (WEPOS) it will support exciting future enhancements, such as real-time inventory access and in-store digital downloads to portable devices.

The new digital media kiosks are also empowering Fort and his team with centralized management, and a common look-and-feel across point of service (POS) and back-office platforms and applications. WEPOS helps retail organizations to decrease store costs, have greater visibility into their business and to create a truly innovative customer experience.

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>
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Microsoft Rides Out on the Open Road

But CodePlex developer site raises questions of motive, licensing

BY P.J. CONNOLLY

Last month, Microsoft further immersed itself in the waters of open source by launching CodePlex, an online repository for "open and shared source developers." CodePlex, open to the public at www.codeplex.com, bills itself as a beta (as of Memorial Day weekend), and according to the site's FAQs, was written from scratch in C# and runs on top of Microsoft's Visual Studio Team Foundation Server.

Of course, what could have been the first contribution to the site—the source code to CodePlex itself—isn't being shared. The official explanation is that it's "designed to run in the Microsoft data center, so it isn't something that could realistically be hosted in another environment."

But in the short life of the site, there's already been some activity, including postings of an AJAX.NET starter kit, the Tao framework—aimed at developing across Mono and .NET platforms—and an open-source Web part that adds improved discussion services for SharePoint Portal Server and Windows SharePoint Services sites. This comes in spite of the usual teething pains of a new site; log-in, mail and registration issues had all cropped up in the first weeks.

Microsoft's motives for establishing CodePlex are complex. An unattributed company statement provided to SD Times read, "Microsoft wants to contribute to, encourage, and engage with an active collaborative community for .NET project development and source code sharing. We're excited to showcase Microsoft's Visual Studio Team Foundation Server technology. And we're pleased to host a site where developers have complete freedom to choose the license types that best suit their needs."

CodePlex is designed to give resources to shared-source developers.

But senior analyst Michael Goulde of Forrester Research believes Microsoft is just being Microsoft. The first reason for CodePlex to exist is branding, Goulde said. "Microsoft wanted to have an [open-source] infrastructure that had their brand on it, not the SourceForge brand."

Licensing is a second—but important—factor, according to Goulde: Microsoft has "a couple of their own flavors of open-source licenses. They're not listed on the Open Source Initiative site…the fact is, the Microsoft open-source licenses [are] not accepted at SourceForge." CodePlex is "an attempt to further the cause for [Microsoft's] brand of open-source efforts."

Goulde argued that a vacuum exists in open-source development that Microsoft could, if so inclined, exploit. "At the end of the day, Java is just as proprietary as .NET, yet there's orders of magnitude more work going on in Java and for that matter, in PHP and other non-Microsoft technologies…Microsoft could be doing a lot to support that if it was really, genuinely serious about [bringing] the benefits of the open-source development model to its ecosystem."

What Microsoft makes clear is that at least in the short term, CodePlex won't replace the existing Gotdotnet Workspaces, which currently gives roughly 8,000 projects a home on the Web at MSDN. ■

Salesforce.com Expands and Loosens Platform

Not just for CRM anymore, company launches third-party OEM program

BY ALEX HANDY

Salesforce.com launched a new OEM program in late May that pushes this software as a service company out of the realm of extensible CRM providers and into the world of SaaS platform hosts. The new OEM program gives developers the ability to build and sell applications on the Salesforce.com platform without the need to have customers sign up for Salesforce.com's CRM products. Yet one analyst said the pricing structure as it now exists might not allow third parties to derive income this way, and might even cause them to lose money.

The new OEM offering is an extension of the Salesforce.com AppExchange program. AppExchange, which was launched last winter, is an on-demand platform for business information management, and since its launch, said Salesforce.com's CEO Marc Benioff, more than 250 third-party applications have been built on the platform. (See "Informatica Gets SaaS-y With Salesforce.com," page 6.) Until the launch of AppExchange OEM Edition, however, all of these applications were tied into the Salesforce.com CRM subscription model.

Over 250 third-party apps have been built on Salesforce.com, says Benioff.

The new OEM program gives developers the same Salesforce.com platform and development facilities, but allows developers to charge their own subscriptions for access to their software as a service. Salesforce.com charges a straight fee of US$25 per user per month, and the company behind the product determines its own pricing.

The real benefit of the platform, however, is not derived from its simplistic pricing model, said Dru Jacobs, director of product marketing for Rally Software Development, but rather from the simplified development model facilitated by the platform. Jacobs' company announced the release of Rally Agile Product Manager, the company's first application lifecycle management tool. Jacobs said that the tool took only a few weeks to build, but it is already being tested out by developers around the world. He attributed the speed of the development process to the fact that the Salesforce.com platform handles most of the typically time-consuming development issues, such as security, the underlying server stack and the hosting.

"There are warts," said Jacobs of the Salesforce.com development environment, "but it's hard to argue with the time it took. Our agile team of two took two weeks to build this." There were additional testers involved, said Jacobs, but the heavy coding was done in a very short timeframe.

That's a sentiment echoed by Kieden's Matt Ho. Ho is Kieden's lead developer on a non-OEM AppExchange tool that tracks Google AdWords statistics and leads. Ho said that he began working on the Kieden product in January, and every month since its release, he has posted a new version of the tool.

That simplified development model is changing the way some companies do business. Remend, a real estate software company, recently launched Remend REO Agent as an OEM AppExchange application for realtors. Don Morrison, CEO of Remend, said that his company spent seven months building the tool on a Java EE stack, and had only a primitive GUI mock-up prototype at the end of that period. "We just ran out of steam. Then we went to Salesforce.com." Morrison said that his company's tool was up and running a month later on the Salesforce AppExchange platform.

Liz Herbert, an analyst with Forrester Research, agreed with many of the benefits of the platform, but she worries that the current pricing structure could cause companies to lose money if their customers switch from an OEM product to the full-on Salesforce.com enterprise subscription.

"Where I think they're going to run into trouble is with some of these limitations they've set, like this five-tab limit," said Herbert, referring to the limited number of accessible application pages available to Salesforce.com OEM developers. "If a buyer of OEM versions, like a Remend customer, has used the five-tab limit, that means the end buyer can't add more tabs. Then [the user's] path to upgrade is to go to a full Salesforce.com subscription." ■

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Chart FX for Visual Studio 2005

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Evidence of this is the **Smart Tag Wizard** that exposes many of the properties to select and display in real-time. There is also a **Data Wizard** which allows you to quickly connect to a data source, map specific fields to the chart and instruct the chart how to use the data. The **new API** was designed with the Visual Studio 2005 object model in mind to make it easier to access complex functionality. Chart FX for Visual Studio 2005 adds a **DHTML rendering engine** that uses the AJAX (Asynchronous JavaScript and XML) web development technique to produce chart images that allow full interactivity and support state in web applications. The **new Extensions Manager** standardizes the infrastructure for using the Chart FX Extensions, such as financial, statistical, maps and OLAP, among others. The Chart FX **Resource Center** provides a "Programmer's Guide", the Chart FX API, an Internet Reference and a wealth of samples and charts (with code). *Learn more about the seamless integration and powerful features at www.softwarefx.com*

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Thought Reduces O/R Mapping to Afterthought

BY EDWARD J. CORREIA

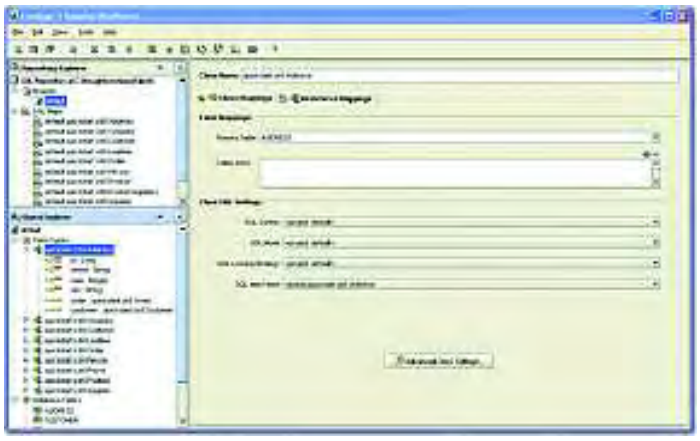
The automated mapping function in the CocoBase Pure POJO 5 Java object-relational mapping product, according to its maker, Thought, reduces the once time-consuming job to a simple task of double-checking.

"The Magic Mapper attempts to reverse-engineer your application," said Thought's CTO, Ward Mullins, referring to the automated wizard new to version 5. "It attempts to find out what you have on both sides, taking into account your application classes and database models," he explained. "Then it looks for mismatches in naming conventions and types, and [displays] any problems that resulted."

Working within Eclipse, developers are presented with a list of automatic mappings and can click to edit them manually, if needed. "This [replaces] a lot of manual steps with a system that uses a best guess," he said. A preference slider allows users to select how hard the tool will work to try to solve mapping problems to "catch more fine-grained mismatches," he said.

Pricing remains at US$6,000 per developer; there are no server or runtime fees.

CocoBase 5 also now includes Mapping Workbench, which offers developers a single place to create their class-to-table mappings, rather than having to page through multiple editor screens to specify mappings. A new persistence and query manager handles local Java SE and distributed Java EE objects without changing the bytecode or adding annotations or extensions for POJO or EJB 3.0 objects.



CocoBase Pure POJO 5 now includes Mapping Workbench, a unified mapping experience within Eclipse that can handle all class-to-table mappings.

Also new is the ability to input custom SQL operations, which Mullins said enables developers to execute code-level actions from a project-level interface. "After you've mapped, you often need to do something special, like put in an Oracle hint or insert a field that's always converted to uppercase," he said. "So you might put in a wrapper for that field" that would execute those operations or even route them to stored procedures.

CocoBase Pure POJO 5 is available now; free trialware can be downloaded at www.thoughtinc.com.

SPRING 2 ACTION

CocoBase 5 is now integrated with the Spring 2.0 framework, and includes an implementation of the JPetStore. "This is a fully functional Web application using CocoBase," said Mullins. "People can see a whole object model that's mapped and round-tripped."

Thought also has extended its repository features to accommodate the enterprise. The new functionality is implemented as a layer on top of the previous repository and is backward compatible, he claimed.

Mullins, commenting on the recently completed EJB 3.0 specification, said that Thought favors its new direction. "We like what Sun has done, and our persistence management is along the same programming lines as EJB 3."

The most positive development, he said, was the inclusion of the specs for Java Data Objects (JDO). "It gives developers one set of mapping APIs, and it's all POJO." Mullins said CocoBase will support the new spec in its next dot release, probably in the third quarter. ▮

MKS Puts Portfolios Together With Integrity Suite

BY DAVID RUBINSTEIN

Most project metric and dashboard tools, according to MKS CEO Phil Deck, are designed to spy on developers. The new MKS Portfolios feature released last month with the update of the company's Integrity 2006 application lifecycle management suite is designed, Deck said, to increase collaboration and to delegate decision-making to the shop floor.

"Because we control every task, notification, permission and the like through the life cycle, we have an excellent idea of what's going on," Deck said. "Whether it's a development task, a requirement or a test plan, you can see what went into it" to enable a team to act on changes. "Developers push back when governance is imposed on them," he added. "They don't see how it helps their productivity." Automatic collection and custom display of life-cycle information make it easier for each member of a development team to track his progress or to see what needs to be done next.

Portfolios replaces the Integrity Suite dashboard, which Deck said had similar functionality but was not as scalable. Also new in Integrity 2006 is MKS Deploy, a process-centric server deployment system that Deck said creates an audit trail from the deployed object back to its original requirement. Deck noted the new products were developed in-house for better integration with existing products, not acquired to be cobbled in at a future date. ▮

News Briefs

COMPANIES

Fortify Software has announced FindBugs' integration with Fortify Source Code Analysis. Findbugs is an open-source software tool, developed by University of Maryland professor William Pugh, that looks for bugs in Java programs and also can locate common coding mistakes. Developers can use Findbugs in conjunction with Fortify's tools, such as Source Code Analysis, Audit Workbench and Software Security Manager, to get a single view of all bug catches and code problems . . . **RedGate Software** announced in late May that it acquired the SQL Prompt add-in for SQL Server from **Atadore**, a tool for enhancing queries created with Microsoft tools, including SQL Server Management Studio, Query Analyzer and Visual Studio.

NEW PRODUCTS

AttachmateWRQ has announced the availability of **Verastream Bridge Integrator**, a CICS-focused integration solution that enables customers to rapidly transform business-critical CICS functionality into reusable services without requiring deep CICS skills. Features include support for Web services managed on EJB, COM(+) and .NET platforms, among others, as well as direct access to 3270 applications across multiple CICS sites when using IBM Transaction Server. It does not require modification of the 3270 apps or generation of BMS maps.

UPGRADES

Fiorano Software has announced the release of its updated **Fiorano SOA 2006 E Software Suite.** It allows business and IT users to view business processes and to configure supporting business services and IT infrastructure. New to the suite are improved life-cycle management of services and processes, the ability to perform event process profile management via a single-click process, and new PDF writer and report generator services . . . DataDirect Technologies has released an update to its **DataConnect for ADO.NET** data drivers with a new common programming model for data from most any major database, Visual Studio 2005 integration, and support for IBM DB2, Microsoft SQL Server, Oracle and Sybase metadata . . . Enea has announced the availability of its **OSEck** real-time ENEA OSE™ operating system for Freescale's MSC8144 multicore digital signal process . . . 4D's update of its **4th Dimension 2004.4** database application development and deployment platform now runs on the new Mac Intel Platform . . . Version 1.1 of **Execution Engine** was released from Gorilla Logic with new Eclipse plug-ins for IBM Rational Software Modeler and IBM Rational Software Architect, bringing the ability to create application simulations from models to the Rational Software Development Platform . . . DevComponents has released **DotNetBar Suite 5.8**, which includes a new Office 2007-style Ribbon Control for saving space on screen. It also includes improved menu control that allows developers to create two-column Office 2007-style menus. It is compatible with the latest Visual Studio .NET 2005 . . . Compuware's performance load-testing solution, **Compuware QALoad 5.5**, was released in late May. The tool, part of QACenter Performance Edition, introduces reusable scripting rules to automate test scripting and accelerate performance testing. This revision adds improved server monitoring capabilities . . . DBI Technologies has released **Component ToolBox 7.0**, a collection of 53 OLE-compliant components. New to ToolBox 7.0 are ctGrid and ctExplorerBar, while ctToolBar, ctCombo, ctList, ctTree and three edit controls have been enhanced for creating Windows-style user interfaces . . . mValent has introduced **Integrity 4.0**, an update to its change and configuration management software that now offers enhanced reporting capabilities for auditing and regulatory compliance by providing visibility into application changes as they occur.

PEOPLE

Greg Lund has been named VP of the Asia Pacific region by software simulation provider Virtutech. Prior to joining Virtutech, he served as managing director for Rational Software for South Asia. ▮

Informatica Gets SaaS-y With Salesforce.com

Company's road map for integration shows on-ramp toward software-as-a-service

BY ALEX HANDY

Informatica is banking on a future built around the integration of external software-as-a-service offerings and internal enterprise systems. At its Informatica World conference in San Francisco in late May, the company unveiled its road map that began with the integration of Salesforce.com with its Informatica PowerCenter integration platform.

Ashutosh Kulkarni, principal product manager at Informatica, said that the integration will save companies a great deal of time uploading, replicating and backing up the information contained within their Salesforce.com accounts, and that Informatica's new software will allow these actions to be performed automatically.

Kulkarni described how future updates to the PowerCenter platform will change this server-based, packaged solution into software as a service (SaaS). In phase two of PowerCenter's evolution, enterprise integration with other SaaS offerings, akin to Salesforce.com's, will be available without the need of internally installed software, he said.

"Phase three takes that technology and, using technology-like template-based generation, [will] target a broader range of partners," said Kulkarni. "ADP and HP want to be able to provide these integration services to their end users." That portion of PowerCenter's evolution, will come about in 2007, he said.

HOW IT'S DIFFERENT

Kulkarni differentiated his company's integration service from that of its competitor, Grand Central Communications. "Grand Central has a slightly different model. They provide a hosted service that end users access directly. You subscribe to a Grand Central service to do traditional B-to-B integration." Informatica's integration service will be available through the SaaS providers, and not independently, said Kulkarni.

"What we are really offering is data integration, which we believe makes more sense when delivered in the context of a larger application. We started on this path because we heard the first thing you need to do when you go to Salesforce.com is to migrate all your data to Salesforce.com, then you need to back it up, then you need to synchronize it. We are working very closely with partners,, and we go to market through these partners," he said.

Kulkarni said that the move toward offering PowerCenter as a service is the logical next step. He pointed out how Salesforce.com and other services like it have proven that the SaaS model offers benefits and opportunities, such as limiting the need for regression tests and on-site backups, that cannot be matched by boxed software. ▮

Sybase Simplifies Workspace 1.5 Licensing, Adds JSF

BY P.J. CONNOLLY

SAN FRANCISCO — Sybase announced at the JavaOne Conference here in May that the forthcoming release of Workspace 1.5, its Eclipse-based development environment, would offer a "new" approach to licensing and packaging, whereby the customer pays only for the pieces wanted, mirroring the "componentized" nature of Eclipse itself. Sybase's senior product manager, Loren Corbridge, spoke to SD Times at JavaOne about why Sybase has embraced Eclipse with such fervor.

"The beauty of Eclipse, of course, is that it allows you to pick up some of the other pieces that you want to offer to your customers as part of a development environment [that] you may not want to build yourself." Eclipse, she continued, "is teaching them that they can create the development environment that is appropriate to their needs. Developers are getting used to this idea, and becoming more reluctant to [buy into] this big overall IDE that does everything that I could possibly ever want it to do, in one install."

New features in Sybase Workspace 1.5 will include a Web app development component—implemented through JavaServer Faces—and increased support for database development through Sybase's own DataWindow technology. Sybase Workspace 1.5 is due for release later in June. ▮

Berkeley DB Team Shows Persistence, Revs Java Edition

BY ALEX HANDY

A new persistence API heads the list of features added to Berkeley Database Java Edition 3.0. The Java version of the Berkeley DB is available today and includes performance and ease-of-use enhancements. The Berkeley DB was originally maintained by Sleepycat, which was purchased by Oracle in February.

Rex Wang, vice president of embedded systems marketing for Oracle, said that Sleepycat had already begun work on this new version prior to the acquisition, and was able to release version 3.0 at the recent JavaOne conference in San Francisco. He said that the Berkeley DB is still available under two licenses: the first being a GPL-like open-source model, and the second being a commercial license, US$1,500 per CPU, that is free of the GPL-like restrictions on redistribution of code.

Another new feature, said Wang, is write-deferred capability. "It enables developers to control whether or not to write all the way to the disk, and allows them to tune their applications for performance reasons. The DB now runs in-memory," said Wang. Previously, the Berkeley DB Java Edition could run only from disk. ▮

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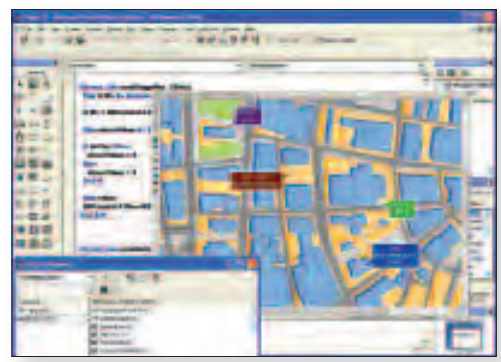

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Gates Unveils Betas in WinHEC Keynote

Windows Vista, Longhorn, Office 2007 available for second public preview

BY P.J. CONNOLLY

WinHEC attendees went home from Seattle late last month with some extra stuff in their bags, after Microsoft founder Bill Gates announced the release of beta 2 code of the next versions of Office, desktop Windows and Windows Server. The actual software was in their hands the next day, having been released to manufacturing the day before Gates' WinHEC keynote.

Almost simultaneously, remarks made on the other side of the Pacific by Microsoft CEO Steve Ballmer in Tokyo hinted that Vista might slip again, as reported by Agence France-Presse. He claimed that the company was simply asking vendors when they'd like to have the software; one expects that "Christmas 2007" is a common response.

But publicly, the company still plans to ship Office 2007 and Windows Vista in October and November 2006, respectively, to satisfy volume license customers, with general availability in January 2007; Windows Server, codenamed Longhorn, is expected to ship in late 2007.

Gates' speech picked up where he left off last year, by focusing on advances in 64-bit computing. He announced that Exchange Server 2007—the former Exchange 12—would ship only in a 64-bit version, and that customers could expect to see other server applications move to 64-bit-only support over time.

A demonstration of new hypervisor-based virtualization technology followed, with Gates' claim that it will ship 100 days after Longhorn—though a Q&A on the Microsoft Web site with senior vice president Bob Muglia says "180 days." In either event, it effectively translates to 2008. Then came the beta announcements. Demos of Vista and Windows Live closed out the keynote.

Also at WinHEC, Microsoft released beta 2 code for WinFX, the company's next-generation managed-code programming model, a superset of the .NET Framework and a core Vista component. The downloadable bits (msdn.microsoft.com/windowsvista/getthebeta) also support Windows Server 2003 with Service Pack 1, Windows Server 2003 Standard and Enterprise x64 editions, and Windows XP with Service Pack 2.

In other Microsoft virtualization news, the company announced on May 21 that more than 200,000 downloads of Virtual Server 2005 R2 had taken place since the product became available for free in April, and that Virtual Server 2005 R2 Service Pack 1, currently in beta, was expected to be generally available in Q1 2007, at no charge to customers. ■

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Tom Francis
Software Architect
PKWARE

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Outsourcing Without Offshoring Is Aim of 'Software Factory'

ObjectBuilders claims to create custom applications by integrating existing third-party apps

BY P.J. CONNOLLY

The idea of a "software factory" may not be new, but it's getting new attention thanks to the work of ObjectBuilders, a software provider based in suburban Philadelphia. The company in mid-May unveiled a service called The Software Factory, calling it a logical outgrowth of its custom software business.

Third-party applications, such as Business Objects' Crystal Reports, FileNet's Process Designer, and Microsoft's Access and FrontPage, supply the basic functions of a Software Factory application. The secret behind The Software Factory is a pair of ObjectBuilders' own tools, LiveIntegrator and LiveModeler, which output so-called LiveXML documents instead of traditional code.

According to the company, LiveIntegrator can create composite applications from third-party apps, or others developed within the enterprise. LiveModeler abstracts data sources from databases or Web services, permitting developers to combine the sources into a business model and publish them as one or more LiveXML documents. End users consume those documents using the LiveApp Player rendering engine to access the data sources.

ObjectBuilders' pricing methodology is virtually *prix fixe*: so much per report, so much per workflow step, and so on; part of the specification for a Software Factory application includes a "bill of materials." The company boasts it can complete most applications in 30 to 60 days; roughly two-thirds of this time is devoted to setting the specifications, and of course, smaller projects can be knocked off in as little as two weeks. All of the assembly work takes place at ObjectBuilders' facility in King of Prussia, Pa., which currently has roughly 100 people dedicated to Software Factory operations.

"Our vision has always been to create a product that allows business users and technical users alike to assemble business applications as easily as you would create a PowerPoint presentation," said Robert Schmitter, president and CEO of ObjectBuilders. The secret, as he put it, is the ability to "parallel-process" the construction of applications.

Schmitter thinks the time is ripe for assembly-line methods: "It's not just our product alone; there's no one product that's the silver bullet. What's exciting about today's industry is you can combine...products to allow you to truly assemble business applications."

Schmitter is so confident in The Software Factory's appeal that he's giving away an application to anyone who pays for the specification. ▮

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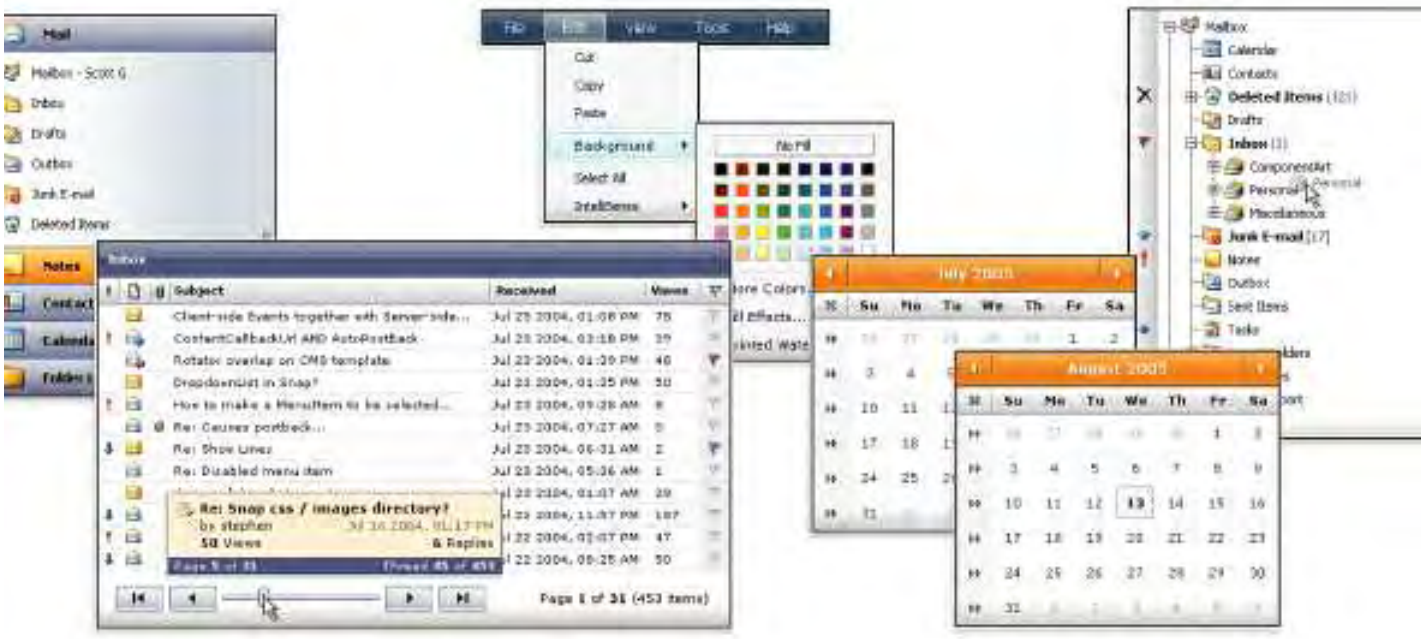

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Switching Gears for the Life Cycle

BigLever's product line automation tool ties into requirements systems

BY DAVID RUBINSTEIN

If you can create an application from parts, then break it down and reassemble those parts in a slightly different manner into a new application—with its components already written, tested and proven—great savings in time, effort and cost can be realized.

This approach, called product line development and an important part of portfolio management, requires discipline, though. And according to Charles Krueger, the CEO of product line development management company BigLever Software, that's the rub. "It's hard to get people's attention with this. Software is soft. It's an immaturity issue. Folks don't want the discipline."

The message, though, is resonating in big companies with established processes, he said. "Companies that are serious about process and life cycle now want support in other phases." To that end, BigLever on June 7 released version 5.2 of its flagship Gears product that can now work with requirements tools that have a database at their foundation, instead of simply working off written requirements documents.

HERE'S THE POINT

Gears, which enables organizations to automate the process of creating multiple versions of software, has the ability to produce a model that can show the points in a product line that cause variations to occur. That point could be an optional feature, or a price point. At the code level, Gears introduces the notion of a variation point. Choices of code or methods are encapsulated with a set of rules at those points where a feature or function needs to vary, Krueger said.

The decisions about which features are required in each product line iteration are made at the model level, and then Gears takes those decisions, visits the variation points in the codebase and instantiates the decisions to create a single product flavor.

Gears 5.2 also has navigational and visual enhancements so that the big picture can be gleaned from the different product lines. The idea, Krueger explained, is to look at this kind of development as creating different members of a family, taking advantage of work done in previous iterations to eliminate rework, rather than creating a whole new project each time requirements change. This family-oriented approach to development, where the abstractions between versions are described, specified and then translated into deliverable software, came to be known as the FAST process. ■

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No Details on Java Open-Source Plan

◂ continued from page 1

Jackson. Schwartz did speak briefly to Sun's current troubles after his keynote address, however. During a press conference, Schwartz said, "I don't know of any companies that cut themselves to greatness." The remark was a reiteration of Schwartz's belief that Sun's 38,000 employees should all remain at the company.

However, on the Monday following JavaOne, Mike Lehman, CFO of Sun, told investors at the JPMorgan Technology Conference in San Francisco that layoffs may be coming for the company as soon as this summer, contradicting Schwartz's previous statements. Lehman stated, "We are going to take cost out of the company. The largest single cost inside the company is head count followed by depreciation and write-offs. So those are the two biggest levers we have."

Schwartz's biggest talking point at JavaOne was the future open-sourcing of Java. While no Sun employees could give a time frame for the move to be completed, Schwartz insisted, "It's not a question of whether we open-source Java; it's a question of how we open-source Java."

CAUTIOUS OPTIMISM

Scott Cosby, a Java developer and Gluecode transition executive at IBM, said that his company welcomes this news, but is waiting to see how it pans out. "It is something that we have been a proponent of for a long time. 'Not if, but how' doesn't really provide much of a road map," said Cosby.

Cosby said that he expects an open-source Java to be influenced more by outside forces, than to be controlled exclusively by Sun. "It would be interesting to see if—when the reins are off—if there is some thought about the directions of the tech that could be more focused on new devices or emerging platforms. That's to be determined."

Cosby also said that Sun's move will require IBM to reconsider some of its current projects, such as Harmony.

But that hasn't dissuaded Geir Magnusson Jr. from continuing to work on Harmony, an open-source implementation of Java SE to be released under an Apache license.

"Harmony will continue," said Magnusson. "I assume that people will individually make decisions about their participation in Harmony once Sun actually does something, but that depends on what Sun does, how they do it and on what timeline, and the reasons for each contributor to be participating in Harmony in the first place."

Magnusson is a full-time Intel employee, a member of the JCP and the project lead on Harmony. He has been working on Harmony with developers from IBM and other companies for just over a year now.

Michael Goulde, senior analyst at Forrester Research, is also waiting to pass judgment on the move. "When I talk to developers about this, they are more or less resigned to the current state. There might be cases where they think they can benefit from an open-source Java, but in general they've accepted the status quo. Today, with so much work in other areas from Apache and Eclipse, Sun is almost not on the radar," said Goulde.

But once Sun does move Java into the open-source community, said Goulde, the battle is only half over. "The devil is in the details. It really is going to depend on what kind of licensing they put in place, whether they use the Sun open-source license or whether they use one of the more widely accepted licenses. It could kick off work in innovative areas for Java tech that Sun didn't have the bandwidth to pursue [itself]. But that really depends on whether there's anyone out there who wants to work in those directions," said Goulde.

A LINUX-FRIENDLY JAVA

Elsewhere at the conference, Linux was a major theme for both developers and Sun. At JavaOne, the company announced that it had changed the license under which the Java Development Kit (JDK) and the Java Runtime Environment (JRE) would be distributed.

Ubuntu founder Mark Shuttlesworth was on hand at JavaOne to announce that, thanks to the license change, the Java platform could now be automatically downloaded and installed onto computers running Ubuntu Linux. Previously, Ubuntu, Gentoo and Debian Linux users had to download and install Java by hand from Sun's repositories.

Apart from the legal and open-source-related announcements, Sun showed off four new plug-ins for its NetBeans IDE: Jackpot, a next-generation refactoring tool; a plug-in for developing applications that function in real time; a plug-in to help facilitate Web services interoperability; and the Compute Server Plug-in, which adds NetBeans tools to help take advantage of Sun's Grid clustering technology within applications.

Sun's grid computing plans continued to expand at JavaOne. The company announced that developers who join Sun's grid community can receive 100 CPU hours of time on its Grid Compute Utility for free. This is designed to foster collaboration around Sun's grid technology. ■

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Google Gives AJAX A Juicy Role in Java

Tools, talks help interoperability

BY ALEX HANDY

SAN FRANCISCO — At JavaOne last month, Google announced the beta release of Google Web Tools, a compiler and library that can turn Java code into functional JavaScript. It was one of a number of tools being created to give Java the ability to work with other languages, such as PHP, Ruby and C.

Bret Taylor, product manager for the developer program at Google, characterized Google Web Tools (GWT) as a near necessity for Java developers trying to use JavaScript in their Web applications. "JavaScript and HTML are implemented so differently across each browser that it becomes very difficult to write once you get to a certain level. This is our way of letting other developers leverage our AJAX expertise within their own applications."

GWT, said Taylor, translates straight Java code directly into HTML and JavaScript without the need for browser-specific workarounds. The tool is a stand-alone development environment, but it can be used within Eclipse, said Taylor. The beta of GWT, which is free, is available now at code.google.com/webtoolkit.

Google wasn't the only company helping developers cope with non-Java code. Jazillian, a Chicago-based development house, was demonstrating the latest version of its C/C++-to-Java Web service. Steve Ghareebm, vice president of sales and marketing for Jazillian, claimed the service automatically generates clean, maintainable Java code from C/C++ code submitted online.

In a press conference at the show, Tim Bray, Sun's director of Web technologies, said the big question is how to integrate the many Java implementations of scripting languages that are popping up in development communities. These include Caucho Technology's Resin PHP application server, Ruby clone JRuby, and Jython.

"Web services were the thing that was going to solve that problem. I believe the WS-* thing has gone pretty firmly off the rails. There's a lot of scope for exploring alternative lightweight solutions," said Bray, stating his belief that the WS-* specifications are too complex and unwieldy.

Bray cited Caucho's Resin for providing the stability of Java and the ease of PHP. Resin also can run on a Java Virtual Machine, making integration simpler by exposing Java classes to the scripting language being used. It is this model, said Bray, that should be emulated to help create harmony between scripting languages and Java. ▮

'[Sun's] playing catch-up, when before they were way in the lead.'

–Simmule Turner, BancTec

'[Sun] lost a very good chance for Java.'

–Wendy Du, Motorola

'If the company doesn't make money, some things have to move.'

–Sunil Krishnan Kemper Insurance

They're Holding Sun Accountable

JavaOne attendees say it dropped ball on advancing Java

BY P.J. CONNOLLY

SAN FRANCISCO — The executive upheaval at Sun Microsystems in the weeks leading up to the recent JavaOne Conference failed to have any real impact on Java developers, according to an informal polling of that event's attendees.

While generally positive about the conference, attendees reserved their harshest criticism for Sun's advancement of Java itself, saying the company failed to capitalize on the opportunity to build Java into the dominant development and deployment platform.

Wendy Du, an architect with Motorola in Beijing and a Sun alumna, argued, "[Sun] lost a very good chance for Java. They have a very good technology implementation, [but] I don't think they're doing much with their position."

Simmule Turner, BancTec's director of architecture and technology who is based in Irving, Texas, summed it up from his perspective: "Java's been too fragmented. You have IBM doing lots of great stuff with Java and all of their Java development tools, and Apache doing a lot of stuff.... I think [Sun] missed their opportunity...it's easier to do development in Microsoft tools now, so I think now [Sun's] playing catch-up, when before they were way in the lead."

He sees this in his own company: It's mostly C# and VB.NET today, but "two or three years back, we were mainly hiring Java EE-type developers, and we're not hiring any more. So, we have one major team that's actually doing J2EE development, and that's it."

UNAFFECTED BY CHANGE

As for the changes atop Sun, most of the attendees interviewed had little interest in the recent chair shuffling inside the company's executive suite. Sunil Krishnan, application designer for Unitrin's Kemper Auto & Home Insurance division in Jacksonville, Fla., pointed out that Wall Street was getting annoyed, noting: "If the company doesn't make money, some things have to move." Turner was unimpressed by the moves. "I don't think it'll make much difference," he said.

The conference itself received generally good marks. As Shawn Moe, a software development manager with IBM in Lenexa, Kan., said: "It's kind of overwhelming."

BancTec's Turner said, "It's actually much better than it was a couple of years ago. It seems to be improving. Their sessions are more interesting to me because I'm into mobile development."

He continued, "I think it's coming full circle: A few years back, it was mobile technology, and now it's back to mobile technology."

Others we spoke to agreed. Krishnan noted the show was "pretty well organized, for the number of people. I can see a lot of effort being put into the show behind the scenes."

Sonya Lowry, a senior software system engineer with the National Optical Astronomy Observatory in Tucson, Ariz., felt like she was on familiar turf. "It was interesting to see SOA big right now, because I had worked on SOAs back at the turn of the century...so to see the rebirth of them has been interesting," she said.

Even the seemingly endless lines to get into the most popular sessions had their benefits: "I learned a lot more than I thought I would...from standing in line for half an hour," said Jeri Miller, a support developer at Jeppesen Sanderson, of Englewood, Colo.

Nora Dillman, an IT specialist with the U.S. Department of the Treasury in Hyattsville, Md., is a database veteran, but new to Java development. "There are a lot of things that I definitely want to go home and try...Struts and AJAX, and how they work together."

Krishnan got a boost from meeting people outside his industry. "I thought insurance companies were behind on processes and technology." He explained, "We're not alone in that...it's [ultimately] business needs that drive any IT process. He found "that a lot of people were in the same boat." ▮

JavaOne Goes According to Scripting

BY ALEX HANDY

SD Times SHOW REPORT

SAN FRANCISCO — The 11th annual JavaOne conference held here had a distinctly new flavor, evident as the show opened on May 16. That flavor, particularly pungent among companies non-Sun, was Asynchronous JavaScript and XML. While Sun Microsystems itself touted AJAX interoperability with Java, third parties continued to expand the role of the scripting language created for browsers.

ICEsoft displayed ICEfaces, its new AJAX development tool for Java EE 5 users. Robert Lepack, vice president of marketing for ICEsoft, said that ICEfaces gives developers a set of JavaServer Faces (JSF) components that can translate Java back-end actions into stateful client-side elements, giving developers interactivity without the need to refresh the browser pages being issued.

Justsystems spent its time at JavaOne talking about mashups, those Web apps or sites that combine content from multiple

▸ continued on page 16

SD Times Photo: Alex Handy

Developers catch a break at the Moscone Center during JavaOne.

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JavaOne Goes According to Scripting

◂ continued from page 14

sources into a single integrated view. Its soon-to-be released xfy Enterprise Solution gives developers the tools they need to harvest XML data from online resources such as Google Maps that can then be sent to the client for use in a mashup, such as placing restaurant locations onto a map, or viewing concert ticket prices on a calendar.

Backbase was on hand to show its first edition of the Backbase AJAX Java Edition. This toolkit gives developers the ability to build AJAX-based user interfaces on top of their existing Java applications.

Infragistics had some AJAX-related announcements at the show as well; its products focus more heavily on integrating AJAX with JSF. The company's interface development software, NetAdvantage, now comes specifically for JSF. NetAdvantage for JSF uses JSF components to build attractive and simplistic interfaces for Web-based Java applications.

ILOG announced the release of JViews 7.5, a tool built to help ease the creation of Java GUIs. Version 7.5 adds AJAX-based UI construction facilities.

Alfresco showed version 1.3 of its self-titled content management software. Alfresco 1.3 is an open-source tool for building enterprise content management systems.

TIBCO Systems' General Interface was updated for JavaOne with support for third-party AJAX and open-source components, starting with the Dojo AJAX library.

NOT ALL AJAX

Not every company at JavaOne was showing off AJAX tools. **Maplesoft** announced the release of Maple 10, the latest edition of its mathematics toolkit. **Parasoft** offered show goers a look at Jtest, its automated Junit test generation tool. And **CipherSoft** demonstrated Exodus-ADF, a new migration tool designed to translate legacy Oracle applications into Java.

And on the subject of **Oracle**, the Silicon Valley giant offered the Java community a number of open-source goodies at the show. First, Oracle announced that it would be donating a reference imple-

as AJAX Muscles Into Spotlight

mentation of the Java Persistence Architecture to the open-source community.

Ted Farrell, Oracle's chief architect and vice president of tools and middleware, said he was pleased to see JSF and AJAX taking the spotlight on the JavaOne show floor. "We standardized on JSF for our user interface two or three years ago. Last year we donated about 100 or so JSF components to open source under the MyFaces Apache program. Those generated HTML and a little bit of JavaScript to help build Web applications. We've worked on an AJAX render capability as well, so JSF will output into AJAX DHTML," said Farrell.

BEA Systems, too, has donated a good chunk of code to the open-source community. Portions of its Kodo 4.0 persistence mapping tool were handed over earlier this year, and at JavaOne, the company announced the general availability of this tool. Kodo 4.0 supports EJB 3.0, and includes tools to help keep database objects in memory without gumming up the inner workings of the application server.

Azul Systems released an updated version of its namesake software suite that allows developers to implement pauseless garbage collection in their application server. The Azul Systems Software Suite also includes the Azul REALTime Performance Monitor, a new tool to analyze applications running on the Azul virtual machine.

Repository mining and monitoring software company **Enerjy Software** announced the release of Enerjy CQ 2 version 1.1. This updated version adds support for large teams, bringing code contribution pie charts and bug-culpability information to managers controlling teams that are spread around the world, or around the block.

Nexaweb Technologies released jRex 1.0, a server-agnostic declarative XML user interface engine that helps developers build rich Internet applications. The point-and-click tool allows users to chart relationships between incoming XML information streams and on-screen user interface elements.

Also in the RIA space was **Canoo Engineering**'s new version of its UltraLightClient software. The software offers developers a library for building rich Internet applications in pure Java. Version 6.1 of the software includes an enhanced API for extending the library's functionality.

Terracotta announced its new Terracotta Sessions for Tomcat. This clustering software allows Tomcat-based applications to be clustered across multiple servers without losing the vital information each client requires to use interactive Web applications. When one server goes down, the others in the Terracotta cluster receive the client-specific information related to the lost session, allowing the cluster to continue its interactions without losing the client's data. ■

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— Patrick Higgins, Senior Software Test Engineer, SSAI

Putting a SQL Face on Mainframe Datasets

BY ALEX HANDY

Host-to-Web solutions company OpenConnect Systems has partnered with data access software tools provider CONNX to offer a new tool that bridges the gap between Web services and big iron. With OpenConnect's new soaConnect-SQL, mainframe-based applications and data structures can be exposed with a simple SQL query interface. The tool includes a long list of supported systems and hardware platforms thanks to CONNX's participation in the development of the tool.

soaConnect-SQL offers mainframe-to-Web connectivity for Adabas, IDMS, Datacom, Sybase, Informix, C-ISAM, DISAM, Micro Focus, IBM VSAM, Codasyl DBMS, Dataflex, and any OLE DB, ODBC or .NET, or JDBC data source. Many of these systems are supported across older operating systems, such as z/OS and OpenVMS.

All systems integrated with soaConnect-SQL are presented through a single interface and can be accessed live and on-demand.

soaConnect-SQL is available now from OpenConnect, with pricing based on the deployment situation. ▮

DATA MIGRATION IN THE SANDBOX

BY P.J. CONNOLLY

SAP released a new data transfer tool for enterprise software customers on May 22, designed to allow the creation of more realistic nonproduction SAP environments. The SAP Test Data Migration Server takes representative application data from production systems and loads it into standardized system configurations, which customers can then use for developer sandboxing, training and other uses where realistic data is necessary. The realistic, replicated data can be loaded into an unlimited number of nonproduction systems.

SAP claims this provides a better way of replicating production systems without incurring excessive hardware expenses, squandering time or trying to work with live data.

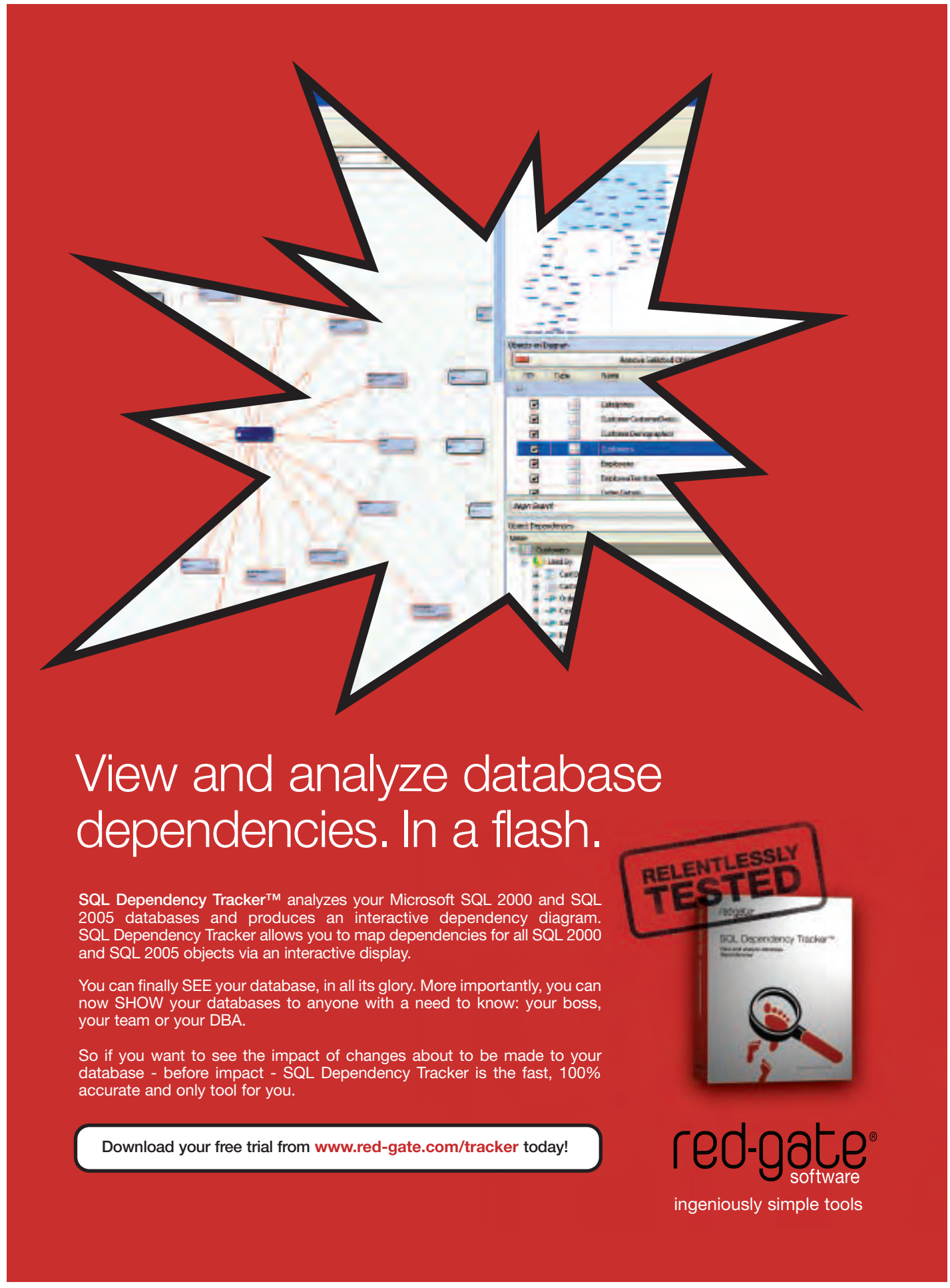
SAP Test Data Migration Server is available now; pricing derives from the size of the customer's production database. ▮

OpenServer 6: High Availability

BY EDWARD J. CORREIA

The SCO Group on May 24 released SCO HA Clusters, an add-on for OpenServer 6 that it says permits the machines to be grouped in clusters to reduce downtime and improve application performance.

The software, according to the company, includes features for dynamic load balancing, fault tolerance and scalability of TCP/IP-based applications and services. Among its other capabilities are automatic IP address switching, unmount and remount of storage systems, and application restart. A GUI-based administrative console is provided for Unix and Windows systems. Admin functions also can be controlled through a Web console. ▮



Borland Advances JBuilder, Not Buyer Info

◂ continued from page 1

tions, who along with Joe McGlynn, product manager for JBuilder, spoke recently to SD Times.

"We plan to announce the name of the investor…in Q3 of this calendar year," Cheng stated. Added McGlynn: "The reception has been just spectacular. We couldn't have hoped for a better reaction from the investment community."

Such good will may help to keep products rolling out the doors of DTG, which has a busy rest-of-the-year ahead. Both forthcoming updates to JBuilder 2006 will address the Mustang release of Java SE 6. The June update will introduce the support, and a service pack planned for the fall will complement Sun's formal release of the new Java.

JBuilder 2007 will support Eclipse plug-ins and address issues around visual EJB and Web services design and development. The 2007 release will also introduce a "Developer Cockpit" task view that adapts according to the current task, in what McGlynn described as "removal of clutter, based on what you're doing."

McGlynn explained why the 2007 release focused on functionality, not features: "Tools [exist] to help them write code, but not ones that give them insight into whether they're writing good code or bad code, whether they're writing the right code, whether they're meeting the requirements."

A 2008 release will include features aimed at enabling SOA development, with previews in the 2007 JBuilder service packs and enhancements in JBuilder 2009. DTG's new plan for the service packs is to add tested plug-ins for the Eclipse-based IDE to the obvious bug fixes and technology previews, with the aim of reducing the need/temptation for developers to tinker with Eclipse.

MORALE BOOSTER

Both Cheng and McGlynn were unfailingly positive about the future of the DTG. Said McGlynn: "There's this sense of excitement in the hallways as you talk to people. People that left Borland because of a difference in opinion over…ALM, [have] come back and rejoin[ed] DTG as a result of the [divestiture] announcement."

The returning employees are often seasoned veterans, McGlynn noted. "On the JBuilder side," he said, "the average tenure for an R&D engineer is 11 years." Cheng was equally upbeat: "All of the developer news groups, all of the customer visits that we've been having in the last few months have been really positive about [the divestiture]."

Borland last month released a free edition of JBuilder 2006 Foundation, which is available now for download at www.borland.com/downloads/download_jbuilder.html. Aimed at entry-level Java developers, it includes CVS version control and unit testing and runs on Linux, Solaris and Windows. ▮

RSSBus Set to Roll, But Who'll Get On?

◂ continued from page 1

policies are being invoked? Can I just push a token through?"

"People tend to think that RSS itself is not secure," responded Hito. "Sure, news feeds that use RSS are all wide open, but nothing prevents you from applying the same security measures to RSS that you now apply to Web pages," such as HTTPS and SSL, he said. "You can enable security controls just like on any Web page."

RSSBus uses the extension methods specified in RSS 2.0 to convert API calls to and from an application or system to the name/value pairs similar to those used by RSS. To RSS and RSSBus, these are known as items. Input values are known to RSSBus as item inputs, and typically contain a URL query string or other standard HTTP mechanism. The resulting outputs are known as item outputs.

Groups of item inputs are stored as operations, and executed by the RSSBus Engine, which is an ASP.NET app running on IIS. The engine creates RSS feeds by serving the item output operations. Since inputs and outputs share the same format, outputs can be consumed by other operations as inputs, creating pipelines. Multiple feeds pipelined from one or more locations to others create workflows.

An XML-based scripting language is provided to manipulate, redirect and combine these feeds for use in applications, portals, Web services or whatever. "Our tool lets developers create those tags on-the-fly," he said of the templating function that permits embedded script instructions to convert RSS items to HTML, plain text or other formats for presentation.

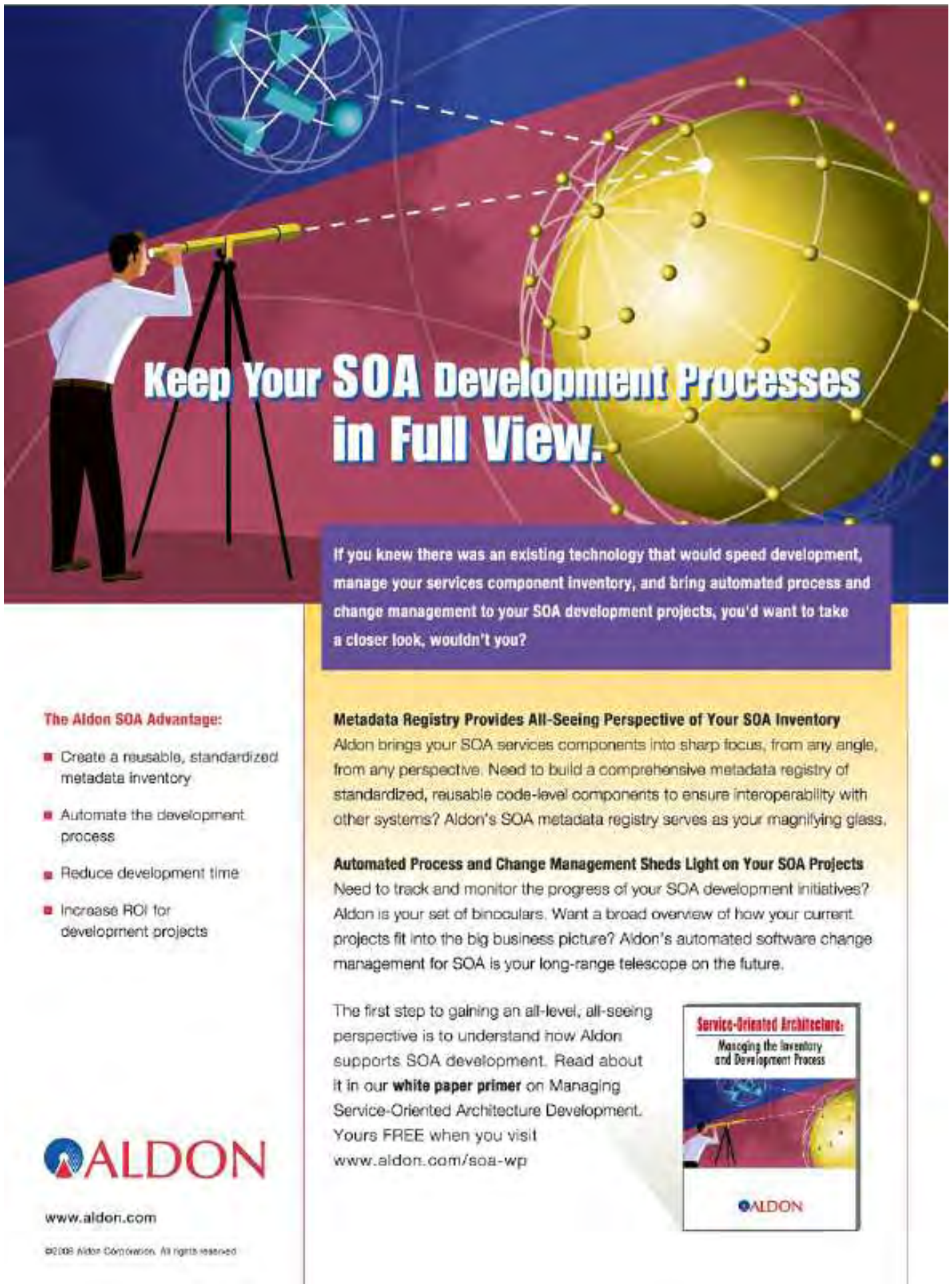
FROM UPS TO FEDEX

The RSSBus Desktop Engine is free and includes dozens of operations for normalizing API calls of Amazon, eBay, FedEx, Google, UPS and numerous credit-card processing companies, as well as for SQL databases, and file, messaging and e-mail systems. An enterprise edition is set for release this summer. Beta versions are available now at www.rssbus.com.

"Why not simplify today's complex data systems? A credit-card gateway can be sent a credit-card number, expiration date and amount, and it returns an approval code," Hito said, citing an example application. "The goal is to allow rich feeds, and RSS is familiar, and it works."

While Kenney was enthusiastic about the applications for a free, low-end service bus for the greater population, he questioned its value to the enterprise. "The majority of ESBs are implemented as part of a larger suite of technologies," he said. "While appealing for the buyer that may not be as tech-savvy, the reality is that many of the apps they buy will already have a usable exposable ESB that will be as easy to use as the Microsoft operating system," he said, adding that Microsoft itself will implement a service bus in Vista, due sometime next year.

But an enterprise looking for a backbone for its SOA is "going to look at ESBs from established vendors like Progress, TIBCO and webMethods." ▮



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"The Eclipse Foundation is proud to participate in the second annual EclipseWorld conference in September 2006. The debut 2005 EclipseWorld in New York was an excellent educational event for enterprise IT professionals. We're glad that the Eclipse community has embraced this independent technical conference."
Mike Milinkovich, Executive Director, Eclipse Foundation

"A good opportunity to meet Eclipse developers of all kinds."
Suzanne Yoakum-Stover, Senior Computational Scientist, SAIC

"EclipseWorld was dynamic, thought provoking and cutting-edge."
Robert Rothman, Senior Developer, Morgan Stanley

"EclipseWorld had a great collaborative atmosphere. It was exciting to learn about the different uses of Eclipse, and see what people were creating with it."
Justin Stern, Software Engineer, Auspice

"Well organized and enjoyed the presentations."
Alice Chan, Software Engineer, CyberAccess

"Good sessions on the basics as well as plug-ins."
Patricia Timms, Senior Software Engineer, Kodak

"It's a really good place to get those questions answered which are hard to find in books."
Farha Azaz, Senior Software Engineer, TouchNet Information Systems

"If you are looking for both high and low level information regarding Eclipse, both as an IDE as well as an RCP, you'll find it at EclipseWorld. The presenters are knowledgeable and approachable. In addition, the networking with other users of the Eclipse platform is invaluable."
Dan Colbert, Product Manager, CompassCom

"Technology being discussed in the conference was very leading edge. I got to familiarize myself with projects I hadn't had a chance to research."
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Mike Milinkovich is the executive director of the Eclipse Foundation. In the past, he has held key management positions with Oracle, WebGain, The Object People and Object Technology International Inc. (which subsequently became a wholly owned subsidiary of IBM), assuming responsibility for development, product management, marketing, strategic planning, finance and business development.

Mike Milinkovich, Executive Director, Eclipse Foundation

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Jasper Cell Phone Calls Java SE

SavaJe puts Swing, Java2D Graphics into the hands of many

BY EDWARD J. CORREIA

If it's true that "the cell phone is tomorrow's desktop," as James Gosling notably remarked in an interview a few days before JavaOne last month, then the introduction there of a Java SE-based cell phone might be more than just fortuitous timing.

The Jasper S20, a triple-band GSM phone manufactured by Hong Kong-based Group Sense PDA, comes preinstalled with SavaJe Mobile Platform, an implementation of Java SE developed by SavaJe Technologies. The phone supports applications built for the Connected Device Configuration (CDC) and with the Advanced Graphics and User Interface Optional Package specified in JSR 209, the forthcoming specification for using Swing, Java2D Graphics and Imaging, and Image I/O in constrained devices.

According to John McCready, SavaJe's senior vice president of marketing, the advantages of developing to Java SE-based devices include easier application integration. "MIDP is a bolt-on solution," he said. "For example, if your app needs presence info from an instant messaging system, you have to install a second presence engine." Unlike MIDP, the SavaJe Mobile Platform is not an isolated runtime, he said. "With our approach, services are presented to any application. That's a huge strength for developers because it works more like a desktop environment."

McCready claims that Jasper is among the first phones to support CDC; Research In Motion's Blackberry devices use elements of CDC, but it's closed, he said. Jasper "is the first device [for which] developers can use NetBeans or other Java tools to build xlets," he said, referring to the name given to apps written for the CDC. SavaJe provides a free version of Sun's Wireless Toolkit that includes a Jasper device simulator and can deploy xlets to Jasper via USB cable.

Since its introduction in 2001, SavaJe's main focus has been on consumer markets. But McCready said a mobile Java desktop implementation also is beneficial to the enterprise. "Client applications written for J2EE will be relatively simple to convert using NetBeans," he said, offering a means to deploy existing apps without specialized skills. "[Mobilizing] a Java app customized for an organization is well within the skill set of those developers."

Services are presented to any app on the phone, says SavaJe's McCready.

JSR 209 was approved in July 2005 by a 10-6 margin, with most dissenters (and even some supporters) commenting that Java2D should be separated from Swing. SavaJe disagrees. "The more specialization there is, the more fragmentation. We have to reduce and protect [ourselves] from the problem of having apps that aren't easily portable. We like the spec the way it is." JSR 209 went to final draft in April. ∎

Sending Diagnostics Into the Field

Wind River tool enables remote updates, device repair

BY EDWARD J. CORREIA

Wind River Systems this summer will enable its Workbench Diagnostics root cause analysis tool to remotely instrument code into running applications, allowing developers to troubleshoot and repair devices that have been deployed in the field.

Workbench Diagnostics, coupled with Field Diagnostics, a new remote monitoring and troubleshooting tool, will be the first components of a Wind River Management Suite that the company says will eventually include software and asset management, and billing and usage analysis capabilities.

Key to Workbench Diagnostics is dynamic instrumentation, which according to Naren Nachiappan, vice president of device software management at Wind River, permits snippets of debugging code to be inserted anywhere within an application running on a remote device.

This solves a problem that virtually every embedded developer has run into: an error in the field that can't be reproduced in the lab. An engineer is sent to try to make the error occur again. "Now you can have the code patched in and do your debugging remotely," Nachiappan said.

Current users of Workbench, which targets VxWorks and Linux, will recognize this feature that he said until now has worked only on local devices. "You pull up the application's source code and get to the point in the application to insert the diagnostic," explained Nachiappan. "Then just right-click and Workbench will pop up a screen with a template. Right-click again, and we compile that snippet and send it to the target." A software agent of about 70KB is required on the target.

Also part of the new suite will be Workbench Diagnostics Workgroups, a Java EE application that enables collaboration between Workbench developers. "Developers can now share diagnostics information and sensor points, drive multiple devices, and do performance testing in the lab environment," Nachiappan said.

Nachiappan noted that the Field Diagnostics module, which monitors and records health and status information of remote devices, also features nonblocking logging, and will not interfere with device operations while writing to its logs. "The advantage is that if the system is doing something else, you're not going to be blocked. It makes the logging [function] minimally intrusive."

The Wind River Management Suite is scheduled for general availability by September; pricing will be based on the number of devices being managed and the number of users managing devices. ∎

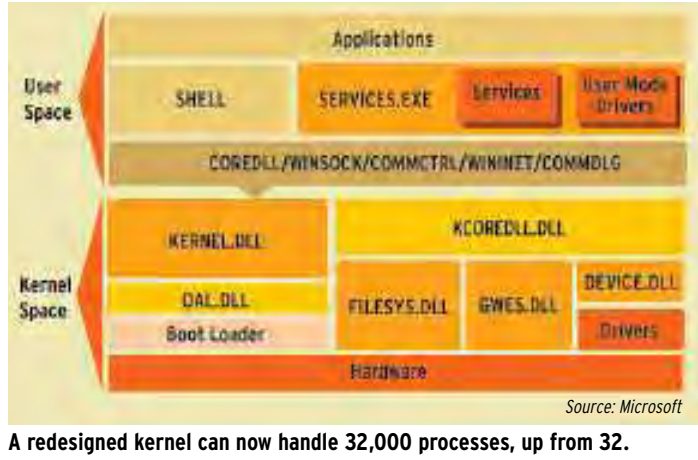
Windows CE Gets Boost to Sixth Power

BY EDWARD J. CORREIA

With the power of the Windows CE 6 kernel increased exponentially, Microsoft expects its mobile operating system to be better equipped to control devices for multimedia streaming, networking and consumer applications.

The company unveiled a preview edition of the new mobile operating system at its Mobile and Embedded Developers Conference in Las Vegas last month, along with a retooled Platform Builder development tool and a hint at sharing more of CE's source code. Windows CE 6 can now handle 32,000 simultaneous processes, each capable of addressing 2GB of virtual memory. The previous capacity was 32 processes addressing 64MB each. Release is set for September.

Some functionality to be included in CE 6, he said, was introduced in April with the Windows CE 5.0 networked media device feature pack. "[Features in] the pack will allow for a set-top box that can interface with other points of content that exist or are created," said Jason Stolarczyk, marketing manager for Microsoft's Windows Mobile and Embedded Devices division. "It's a streamlined end-to-end solution, including all the middleware that would be required for that to take place."



Source: Microsoft

A redesigned kernel can now handle 32,000 processes, up from 32.

Stolarczyk said the developers also will be able to create open devices capable of user customization. "Elements of the device can be downloadable, [such as] user interfaces, network features, or conduits to mobile devices or home networks," he said. Microsoft promises backward compatibility with applications written for prior versions of the operating system. Windows CE 6 will support the .NET Compact Framework 2.0.

The company announced that Platform Builder, its tool for developing operating system images and applications for Windows CE, has been implemented as a plug-in for Visual Studio, and will be available along with Windows CE 6 this fall.

Stolarczyk said Microsoft will continue to offer Platform Builder as a stand-alone environment for now. "We've always had the intention to bring [Platform Builder and Visual Studio] together, and we'll gather feedback on what people need."

He also hinted that Windows CE 6 will offer more in the way of shared source code. "We will be expanding that program. There will be some announcements later this year, but we're not talking about that now," he said. ∎

In Search of Mobile Unification

◂ continued from page 1

Motodev brings together the Horizon, iDen and Motocoder initiatives into a single Web resource. Motorola plans to add other developer support efforts to the Motodev portal over time, and to include new business services for developers.

A new open-source repository (opensource.motorola.com) offers developers a one-stop shop for Motorola source code.

While calling for mobile Java unification, Motorola put its IP where its mouth is by opening the source for its Java test framework, and providing sample test cases, with the Mobile Information Device Profile (MIDP) 3.0 reference implementation and associated compliance tests to follow "soon."

Motorola also will provide kernel and driver code for its Linux-based devices, including the A1200/Ming quad-band feature phone and the A780/E680 Smartphone families, as well as source code for Motorola-led JSRs such as MIDP 3.0.

"All of that is very positive," said Lee Epting, Nokia's vice president of developer operations, in response to Motorola's latest moves.

Meanwhile, the Finnish cell phone colossus made a few moves of its own. Nokia last month contributed the S60 WebKit, the browser engine for its S60 platform, to the open-source community. The move is aimed at unifying a mobile browser market that Epting said currently supports at least 10 distinct iterations, perhaps more.

The S60 WebKit tools are available now at www.webkit.org.

SUN SHINES ON JSRS

While handset makers were busy in their respective corners, Sun at JavaOne released a flurry of product previews aimed at standardizing mobile development. These included enabling bits for Mobile Services Architecture (MSA) support in the wireless client, the JSR 248-ready Java Device Test Suite 2.0 for mobile devices, and early access to configuration and development tools for Connected Device Configuration (CDC) devices.

SD Times spoke to Sun's Client Systems Group vice president Alan Brenner about the perceived disunity in Java ME: "The fragmentation problem is partly a function of the diversity…it's also a function of the growth and the scope of the platform." Brenner pointed out that "each carrier and each manufacturer has to make choices about what capabilities to include on the phone. They often make different choices."

But, he said, "we've recognized the need to balance innovation with organization," pointing to the JTWI (Java Technology for the Wireless Industry) initiative and other efforts by Sun to identify JSRs that could be a common component of every mobile phone, with the latest result being MSA.

Also at the conference, Sun and European mobile services provider Orange announced a partnership intended to create a "Best Practice Design Guidelines" document. They hope that by identifying key issues in developing applications for Java ME, the "write once, port many" approach will become unnecessary. ▮

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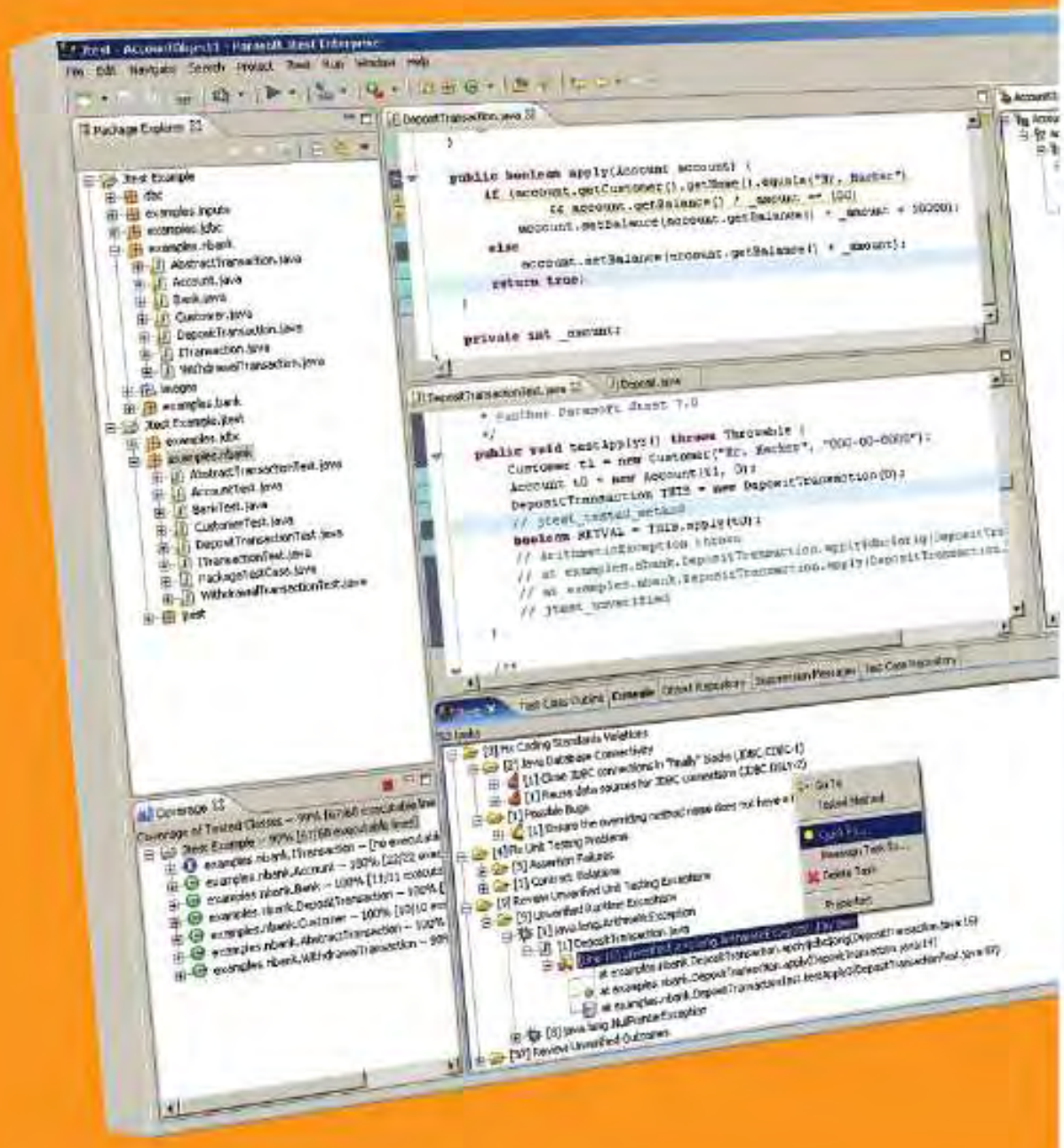

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Of Different Minds About Modeling

Industry mavens weigh in on UML, broader uses for visual representations

BY JENNIFER DEJONG

Time was when UML was just UML. When modeling experts talked about the Unified Modeling Language, they were referring to the language used to communicate the design of a software application. The UML's 13 diagram types—including Class, Object, Component, Sequence, Use Case and Activity—enabled development teams to map out the various pieces of software applications, and to specify how those pieces worked together.

But last month, when SD Times asked a team of five modeling experts to weigh in on UML's future, it was clear the term *UML* had taken on a broader meaning. "The future is not just about UML, but about modeling in general—as a level of abstraction for describing systems," said Richard Soley, chairman and CEO of Object Management Group, the industry consortium that maintains UML. Just shy of its 10-year anniversary, UML is also used to map out business processes, define business rules that help companies implement security policies and comply with government regulations, and to create new standards, such as SysML, used to describe complex engineering projects, the experts said.

Originating in 1997, UML underwent a significant upgrade in August 2003 when OMG formally adopted UML 2.0 and made it available to tool makers. The final version of UML 2.0 was published last August. UML 3.0 isn't on the horizon yet. But the team of experts, which, in addition to OMG's Soley, comprised Bran Selic from IBM, Jack Greenfield from Microsoft, Cris Kobryn from PivotPoint, and Jan Popkin from Telelogic, had plenty to say about code generation, round-trip engineering and what it will take to increase UML adoption among development teams.

SD Times posed the same set of question to each expert. What follows are excerpts from their responses.

SD Times: What is the future of UML?

Bran Selic, IBM: As a standard, UML is being maintained continuously. We have just completed UML 2.1, and already work on UML 2.2 is commencing. The scope of these point releases is mostly maintenance, confined to fixing any left-over inconsistencies or, in cases where the spec is ambiguous or incomplete, to adding clarifications.

On a technical level, I foresee more and more people taking advantage of the deeper semantics of UML 2.0 (relative to 1.0) for advanced capabilities, such as automatic code generation, model execution and model verification. I also see more and more domain-specific languages [DSLs] being defined in the form of UML profiles. These profiles are modeling languages that are based on standard UML and its semantics, thereby taking advantage of the UML foundation as well as the tooling and general familiarity and experience built up around UML. After all, modeling language design is still far from an exact science, and it makes sense to start from a proven base.

Jack Greenfield, Microsoft: I believe the industry will move from general-purpose UML models to DSLs in order to obtain the higher fidelity in modeling activities required to support meaningful code generation, validation, transformation, traceability, refactoring, pattern expansion and other applications of model resident metadata. UML will become a source of modeling language concepts, notations and fragments used in the construction of DSLs.

Richard Soley, OMG: [In addition to extending UML 2.0], the future is about defining new standards, based on UML. The recently released SysML, for designing complex systems that include software, hardware and processes, is an example. It's the first UML-based language that falls outside the realm of pure software.

Jan Popkin, Telelogic: Modeling will remain the accepted communications vehicle. The question is: How tightly should we couple the model and the code? The answer is different for different types of modeling. The first area is business processes and activities, which are abstract. There is no code involved, and a pictorial model is a necessity. In the middle area—applications and SOA—models are used to guide and make changes. You document [the system], often on a whiteboard, before and after implementation. But in the third area—the real-time and embedded space—the model and code coexist. They are self-contained, and they work well together.

Cris Kobryn, PivotPoint: In the longer term, I am optimistic about the future of Model Driven Development (MDD) and visual modeling languages such as UML, since I think it is inevitable that the software industry will eventually mature and bona fide software blueprints will eventually become commonplace. However, in the shorter term, I am concerned about the adverse impact that UML 2.0 language bloat, UML 2.0 dialect divergence, and XMI 2.0 lack of diagram support are having on the marketplace. [XML Metadata Interchange enables easy interchange of metadata between

▸ continued on page 28

The Evolution of UML

1990-1995: Proprietary visual modeling languages proliferate.

June 1995: Authors of significant modeling languages gather at OMG meeting held at Fairmont Hotel in San Jose, and decide to issue RFP for single, standard visual modeling language.

June 1996: OMG Analysis & Design Platform Task Force (ADTF) issues RFPs for standard modeling language and meta-object storage.

November 1997: UML 1.1, the first OMG standard modeling language, published. (UML 1.0 was an internal, interim version published by the submitters.)

December 1998: UML 1.2 revision published.

March 2000: UML 1.3 revision published.

September 2000: RFPs for UML 2.0 infrastructure and superstructure published. UML 2.*x* is made up of two specifications: UML superstructure (the diagrams) and UML infrastructure (the underlying models).

September 2001: UML 1.4 revision published.

March 2003: UML 1.5 revision published.

August 2003: UML 2.0 superstructure made available to early adopters.

April 2005: UML 1.4.2 becomes ISO international standard ISO/IEC 19501:2005.

August 2005: Final versions of UML 2.0 superstructure and infrastructure published.

April 2006: UML 2.1 revision published.

Source: Object Management Group

Experts Are of Different Minds

◂ continued from page 27

UML-based modeling tools and metadata repositories.].

The technical solutions to these problems are relatively straightforward. First, reduce the gratuitous complexity of UML 2.0 by defining a "UML Light" or "Agile UML" subset. Second, define an XML-based model interchange format for "Agile UML" that is simpler than XMI. Third, specify a test suite for "Agile UML" compliance and interoperability. These improvements will make UML significantly easier to learn, apply, implement and interoperate with other software tools.

How can development teams take better advantage of UML-based tools to improve the software development process?

Greenfield: If they are using vanilla UML, then they can move to UML profiles to improve their ability to capture information precise enough to support software development activities. Even better, they can move to DSLs, which are even more precise than UML profiles and offer better user interfaces and tool extensibility.

Kobryn: Developers should begin by realistically assessing the current capabilities and limitations of UML 2.0 and UML-based tools, and find specific ways that these technologies can simplify and automate parts of their current development process. For example, after their UML 2.0 assessment, they may decide that they need only four to five diagram types to precisely specify their software architecture, instead of the baker's dozen that are available. Similarly, after their UML-based tool evaluation, they may decide they only need to be able to draw UML diagrams, but not execute them, since they want to craft the software code themselves, instead of automatically generating it.

Selic: [How teams take advantage of UML] depends on the extent to which they intend to integrate MDD methods into their development process. There is a range of possibilities, from simple visual rendering of source code, to so-called round-trip engineering [where a change made to the model is automatically reflected in the code, and vice versa]. The main thing, however, is for developers to realize that there is value in using models and modeling tools. The reason there is still a lot of skepticism about this among developers is that, in the past, too much was promised and not enough value delivered.

Soley: There is a scale of modeling maturity you find across development groups. On one end, they are writing Assembly language. On the other, they are using abstract models of systems and generating the code. The good news is that no one is at either extreme. Most development groups are using modeling languages as sketching languages, saying: "This is what I want to build."

Popkin: The trick [to taking better advantage of UML] is to keep using UML in a stricter and stricter fashion. The more you use it as the language of communication, the more the comfort level goes up, and the more UML becomes part of the software development process.

What role does modeling play in enhancing software security and compliance?

Soley: UML has a lot to say about compliance. We don't define [the financial and accounting disclosure act] Sarbanes-Oxley, for example. We define business models, which, when followed, allow you to comply with various regulations. Last year, the OMG Regulatory Compliance Alliance (ORCA) began capturing information about regulations, such as Basel II [the worldwide banking initiative] and how to model those regulations. I would love to see governments publish regulations as business rules. We are far from that, but it's the most fair thing to do for business.

Kobryn: As MDD technologies such as UML mature, we are seeing increased interest in domain specific models for vertical markets, platforms and specialized technology areas, such as software security and regulatory compliance services. An MDD approach can increase the precision with which security and regulatory compliance services are specified; when driven by system requirements, it can also help automate system verification and validation.

Selic: Modeling [relates to compliance and security in that it] allows us to specify and view our software from a perspective that is much closer to the problem domain than traditional programming languages.

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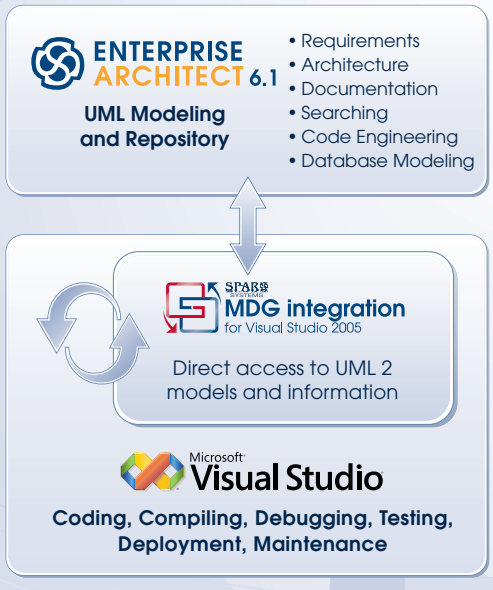

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About Modeling

Popkin: Whether it's security—what I want to do—or compliance—proof of what I did—modeling is the means of representation. The security model [for a software application] is like a blueprint for a house. It specifies how your house will stand up, how you get out in case of a fire. For compliance, modeling lets you lay out an architecture that supports regulations, such as [the health-care initiative] HIPAA and the data protection acts of various countries.

Greenfield: Security and compliance is one of the many domains in which models can capture information that would be difficult to express and/or discover effectively using code alone. A lot of the information captured in security/compliance models ends up in XML-based configuration files, rather than code. Models provide a better means of visualizing that configuration information than raw XML editors. If attention is paid to how models are managed, then model files can be reliably versioned, cross referenced and digitally signed.

What drives development teams that haven't previously used UML tools to adopt them?

Selic: Perhaps the most compelling [driver] is the realization that traditional code-centered methods can no longer cope with the level of complexity of modern software and the reduced tolerance for poor quality. The existence of successful Model Driven Development projects in the same or related domains is often a key motivator—particularly when those projects were realized by competitors.

Popkin: There are a lot of drivers: failure, complexity, compliance, error rates, the size of teams. We have not forced people to do modeling. But [these things] are pointing everyone there very heavily.

Greenfield: Teams that adopt UML tools are usually motivated by the promise of capturing information about logical and technical architecture, deployment and functional and nonfunctional requirements that is difficult or impractical to capture effectively in code. However, they often become disillusioned with UML tools when they discover that the UML notations do not capture that information with enough fidelity to support the generation of useful development artifacts, and that the models do not fit effectively into the software development process.

Soley: Long-term maintenance is the driver for adopting UML. You have to [convey] that competitive advantage to CIOs. That UML models can generate code is important. But it's secondary, compared with UML's ability to plan for systems that last for decades. When UML was adopted as a standard in 1997, it wasn't integrated with the IDEs. That has changed completely. It's in Eclipse, Borland [tools], Visual Studio. [That helps] convince developers UML is in their self-interest.

Kobryn: The best software developers are always looking for innovative ways to amplify their productivity, but they tend to be pragmatists and skeptics, since software compilers are harsh taskmasters.

I generally recommend that software developers introduce UML and MDD incrementally into their current development process, so that their teams will realize statistically significant productivity gains and error reductions in each increment. This sort of incremental approach that emphasizes improvement metrics can furnish a compelling existence proof to developers and managers who are skeptics. ▮

Meet The Modeling Experts

Jack Greenfield is an architect for enterprise frameworks and tools at Microsoft. He previously worked for Rational.

Cris Kobryn is the founder and CEO of consulting firm PivotPoint Technologies. The former Telelogic chief technologist chaired OMG teams for UML 1.1 and UML 2.0.

Jan Popkin is the chief strategist at Telelogic, which acquired Popkin Software last year. He serves on OMG's board of directors.

Bran Selic is an IBM Distinguished Engineer at IBM Rational, and chaired the OMG team responsible for the UML 2.0 standard.

Richard Soley is the chairman and CEO of Object Management Group, the vendor consortium that manages the UML specification.

EDITORIALS

Sun's Missed Opportunity

The air at JavaOne was thick with expectation. The crowd of more than 10,000 developers was packed in for the opening keynote, headlined by Sun's recently promoted chief executive officer, Jonathan Schwartz. In the press section of the keynote hall in San Francisco's Moscone Convention Center, pens were poised over notepads, fingers were on keyboards. What would Schwartz say?

With continuing poor financials, a management shakeup, a robust economy, and entrenched competition in the Java community while Microsoft is still reeling from delays in releasing Windows Vista, there was a lot that Schwartz could talk about. He could talk about exciting new growth directions for the Java community and Java market.

Schwartz could talk about opportunities for the newly approved Java EE 5. He could launch new initiatives, discuss plans to reform his company, places where Sun's policies would change under his administration, perhaps lay out a plan for the next 30 days, or 90 days, or the next year or two.

What else? He could talk about his plans for increasing the synergies between AMD-based servers and storage, or around Solaris, or SOAs. He could talk about new initiatives into the mobile space, or into RFID. He could talk about new tools categories, as he did at previous JavaOnes when he introduced JavaServer Faces and Sun Studio Creator. He could talk about reforming the Java Community Process, about banding together with firms like BEA, IBM, JBoss/Red Hat or Oracle to take on the newly vulnerable Microsoft.

He could have, essentially, explained why Sun is still relevant, what its strengths are, and what he's doing to improve its chances to survive.

Instead, Jonathan Schwartz talked about nothing. Well, he mentioned that there are more Java-equipped phones than there are PCs—which he's said at previous JavaOne conferences. He said that he was committed to open-sourcing Java, and that it was just a question of how, not if. That's good news, to be sure, but not what the JavaOne audience was expecting, given the threats and opportunities facing Sun in this hour of peril.

We still don't know if Schwartz has new ideas, and if he will be taking Sun in a new direction, or if he and McNealy will be pursuing the same old policies as before, with just a change of business cards. Saying next to nothing, in front of so many key decision-makers and influential customers, was a bad decision by the new CEO.

The Little RSSBus That Could

It's not always the IBMs, Microsofts or Suns of the world that produce significant innovations from revolutionary concepts. Great thinkers can come from anywhere, and often it's the little guy with the big idea.

One fine example is N Software, a small company based in Durham, N.C. For the past decade, the company has been developing application components for behind-the-scenes chores such as transferring files and sending e-mail.

At the same time, N Software has been honing its idea for the RSSBus, with the belief that Really Simple Syndication, popular among Internet news and blog sites, can apply as a universal integration layer for all applications and data sources.

The concept of universal middleware isn't new, and many companies have tried and failed. The grand vision presented by Grand Central Communications for hosted integration services has fallen flat. Some thought that REST—the Representational State Transfer systems in use by Amazon, eBay, Google, Yahoo and the like—held such promise. But while valuable, such SOAP/WSDL/UDDI/WS-Security-based approaches have proven far from simple to apply.

The RSSBus idea is novel because it is so simple, and because it doesn't require adoption by any other entity to be valuable. It's also open, well documented and free for personal use. For those reasons, we think the RSSBus has a good chance to succeed. And that shows, plainly and simply, that good ideas can be found everywhere. ▮

Only the Adaptable

Andy Hunt

Programmers are a conflicted lot. On the one hand, we love change. We love shiny new toys: new technologies, new programming languages, new challenges.

When the original C++ hit the scene, we embraced it warmly because now we had C with classes! When Java began to supplant C++, we were thrilled at getting better object orientation and memory management. Ruby is currently gaining fast on Java, and in another 10 years even Ruby itself probably will be replaced with some sort of direct neural-input system or something equally unimaginable.

But on the other hand, even though we tend to greet these new developments full of hope and excitement, it seems we really hate change. We hate new and steep learning curves that are forced upon us, gratuitous vendor upgrades that aren't backward compatible, and new languages with weird, unfamiliar syntax (and far too many angle brackets). We especially hate those pesky users who keep changing their minds about requirements once they start using the system.

Change ain't all it's cracked up to be.

Charles Darwin observed, "It is not the strongest of the species that will survive, or the most intelligent. It is the one most adaptable to change." That sentiment holds true in both the biology and business fields. We like to go around saying that "adapting to change" is what agile software development is all about. But what does that mean, exactly?

Some folks seem to take "agility" as a license to run around like headless chickens, in perpetual crisis mode. Others take adaptability as a commandment to hack mercilessly. And some take "agility" as permission to beat their teams senseless with aggressive, unrealistic schedules.

That's not what we mean by agile.

In our latest book, "Practices of an Agile Developer: Working in the Real World," I settled on the following pithy definition: Agile development uses feedback to make constant adjustments in a highly collaborative environment.

The agile approach combines responsive, collaborative people with a focus on demonstrable, concrete goals—in other words, software that actually works. That's the spirit of agility. The practical emphasis of development shifts from a plan-based approach—where key events happen in individual, separate episodes—to a more natural, continuous style.

That means you don't leave testing to the end of the project. You don't leave integration to the end of the month or stop gathering requirements and feedback as you begin to code.

CONTINUOUS DEVELOPMENT

Instead, you continue to perform all these activities throughout the life cycle of the project. In fact, since software is never really "done" as long as people continue to use it, it's arguable that these aren't even projects anymore.

Development is continuous. Feedback is continuous, from the users, the code itself and your teammates. You don't have to wait for months to find out that something is wrong: You find out quickly, while it's still relatively easy to fix. And you fix it, right then and there, while the details are still fresh in your mind.

That's what it's all about.

This idea of continuous, ongoing development is pervasive in agile methods. It includes not only the development life cycle itself, but also technology skills learning, requirements gathering, product deployment, user training and everything else. It encompasses all activities, at all levels.

Why? Because developing software is such a complex activity, anything substantive that you leave until later won't happen, won't happen well, or will grow worse and fester until it becomes unmanageable. A certain kind of friction increases, and things get harder to fix and harder to change. As with any friction, the only way to fight it effectively is to continually inject a little energy into the system.

NOT A CRISIS

Some skeptics raise the concern that agile development is just crisis management in disguise. It's not. Crisis management occurs when problems are left to fester until they become so large that you have to drop everything else you're doing to respond to the crisis immediately. This causes secondary crises, so now you have a vicious cycle of never-ending crisis and panic. That's precisely what you want to avoid by adopting an agile approach.

Instead, you want to tackle small problems while they are still small, explore the unknown before you invest too much in it, and be prepared to admit you got it all wrong as soon as you discover the truth.

When you're doing agile development, you are part of a team. Agile teams tend to be small or broken up into several small (10 or so people) teams. You mostly work very closely together, in the same war room (or bullpen) if possible, sharing the code and the necessary development tasks. You work closely with the client or customer who is paying for this software

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Andy Hunt, founder of The Pragmatic Programmers LLC, is co-author of the recently published "Practices of an Agile Developer" with Venkat Subramaniam.

Will Survive Change

and show the client the latest version of the system as early and often as possible.

You get constant feedback from the code you're writing and use automation to build and test the project continuously. You'll notice that the code needs to change as you go along; while the functionality remains the same, you'll still need to redesign parts of the code to keep up. That's called refactoring, and it's an ongoing part of development—code is never really done.

Work progresses in iterations: small blocks of time (a week or two or so) where you identify a set of features and implement them. You demo the iteration to the customer to get feedback (and make sure you're headed in the right direction) and release full versions to the user community as often as practical.

Agile development recognizes the importance of pragmatism, and seeks to adjust everything—the schedule, the design, the features—based on what is really happening. It's about facing reality and dealing with it, not hiding behind an IDE, PowerPoint presentation or a Gantt chart.

I've seen plenty of projects fail over the past 25 or so years—both traditional, plan-based projects and newer agile projects. In either case, the dogmatic approach fails.

Sticking to any plan or technique that is no longer appropriate is a guaranteed way to fail. Both the dodo bird and the buggy whip manufacturers learned this lesson the hard way. The economic equivalent of a giant, dinosaur-extinguishing meteor or the next business ice age could come upon us at any moment. And when that happens, only the agile will survive.

Long ago, Heraclitus recognized that "the only constant is change." But that's a little misleading: Only the presence of change is a constant. These days, the rate of change is closer to exponential. You can't avoid it, you can't hide from it, and you'd be hard-pressed to react to it after the fact.

If you've tried something promoted as "agile" but weren't happy with it, perhaps you should look again. Maybe what you were being sold wasn't as agile—or as pragmatic—as you thought.

And if you and your company are using an agile approach successfully, that's great! See you around.

I'll sure miss those other guys. ▮

Letters to the Editor

LEGACY ARCHITECTURE TO SOA

All of the views captured and synthesized in the great special report "Managing SOA Metadata: Registries or Repositories" (May 1, page 33) are consistent with my experience, and represent some of the key issues companies are facing or will face as they move from SOA pilots to full implementation.

Yet one area not considered in the article is the challenge of migrating from legacy architecture to SOA. Specifically, creating, registering and reusing services is not enough. The real value comes when you have replaced multiple proprietary instances of logic used to execute a business service in legacy systems with a standard set of services.

For example, it is one thing to create a service such as "calculate tax" or "check inventory" or "authenticate user." It is a different thing entirely to then locate all instances of this functionality in legacy logic (Cobol, RPG, C/C++, Perl, Java, VB, ASP, eSQL, etc.) and deprecate/replace that functionality with the service.

When this happens, enterprises are able to change a rule in a single location (the registry/repository) and have it propagated throughout their enterprise, driving measurable business value by reducing cycle time, cost and the risk of business disruptions related to application change management.

But this, too, is still not enough! Once the registry/repository is populated and all instances of duplicative legacy logic have been deprecated, the SOA must be actively governed to ensure that duplicative instances of logic are not being created. All of the registry/repository vendors you quoted do a great job at looking within their environments, and Randy Heffner's suggestion that organizational discipline is necessary is right on the money, but in the real world you don't get what you expect, you get what you inspect! Enterprises need to monitor their source-control systems to ensure that duplicative logic is not being introduced post-SOA.

SOA continues to hold tremendous promise, but IT executives and the businesses they are aligned with will fall short if they don't have a way to transition from legacy architecture to SOA, and to actively govern the SOA after implementation.

Guy Hoffman
Metallect Corp.

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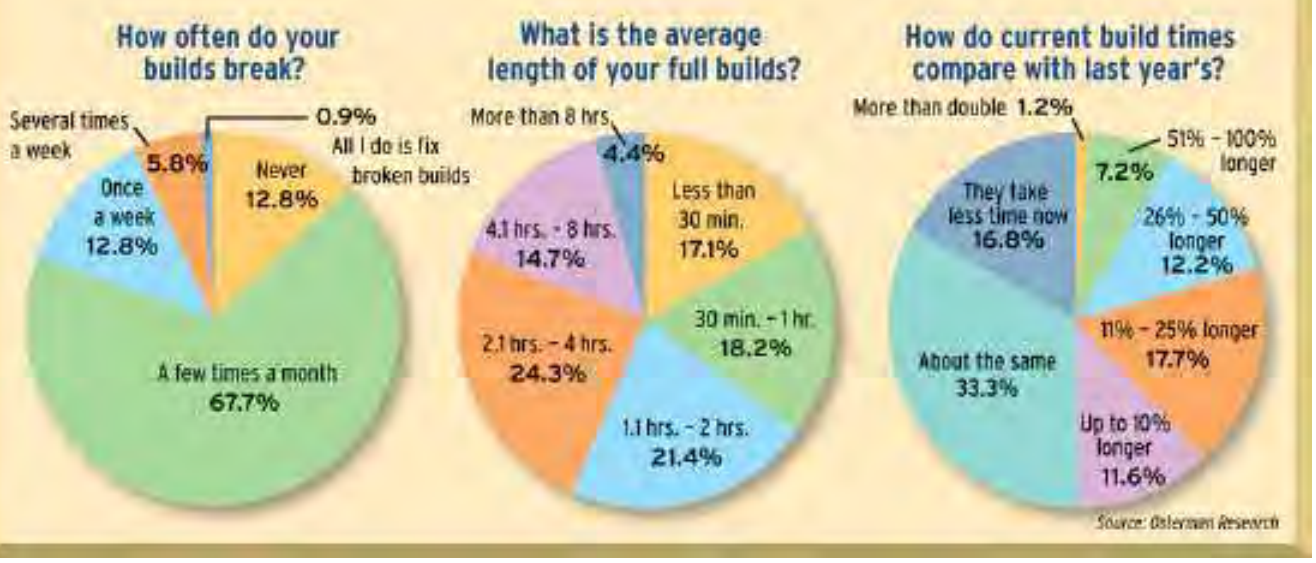
The Trouble With Software Builds

DATA WATCH

Nearly 90 percent of developers have said their builds break at least a few times a month, and almost 1 in 5 said they break once or more per week, according to a survey of 352 developers completed in March by Osterman Research. Most respondents were build managers.

And while nearly two-thirds of developers said their builds take between one and eight hours, half also said build times are down from a year ago. This study was paid for by Electric Cloud, which makes build tools.



SD Times — Software Development — The Industry Newspaper for Software Development Managers

Software Development Times
June 15, 2006 - Issue No. 152

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A Sleepy JavaOne

As I write this column, JavaOne is just winding down. This year's conference was one of the biggest ever, but interestingly, the least energetic of them. There was just nothing new to engender the sort of buzz that I've seen at some prior conferences.

Part of the problem is that the hot topic of the minute is AJAX, and the server side of an AJAX transaction is old-hat Java stuff: servlets and the like. A lot of the sessions were devoted to the client side, but the client side in AJAX is entirely JavaScript, not Java.

The one truly interesting AJAX-development development was Google's new GWT package (Google Web Toolkit, at code.google.com/webtoolkit), which lets you develop the browser-hosted client side entirely in Java. GWT includes a widget library that you program in Java, and a compiler that translates that Java to JavaScript for deployment on your Web page. It's a way to do AJAX without having to write any JavaScript at all.

In spite of the claims I was hearing to the contrary from the JavaScript aficionados, I think that JavaScript is a miserable, inherently buggy language. Since GWT lets you continue a true object-oriented paradigm onto the client-side code, it actually makes AJAX viable, something that I've been dubious about up to this point.

There were a few language/API-related changes of interest.

First of all, there's absolutely no excuse for not using Java 5 if you aren't already. Java 5 is just plain better than all previous versions.

Java 5 incorporates language features that make your code better (more reliable, with less syntactic clutter); it is supported by every major platform and vendor; and unlike any prior Java version, Java 5 has measured five-nines reliability. Most important, all of the significantly cool things that were demonstrated at JavaOne require language features that are unavailable to you in prior Java versions (primarily annotations). Upgrading your system to Java 5 should be a major priority.

Those "significantly cool" things fall mainly into the J2EE (now called Java EE) department. The EBJ 3.0 "Simplified API" and the new Persistence system are big news.

On the EJB front, pretty much all of the error-prone infrastructure is gone. For example, you can make a stateless session bean by declaring a normal Java class (a POJO, if you will) with the annotation @stateless. That's it. No Home interfaces, no getter/setter functions, no deployment descriptors, no complexity.

Java Watch

There's still a complex, impossible-to-use, 850-page EJB specification, but the Simplified API, which sits on top of this abomination, is vastly better. More to the point, the Simplified API isolates you from the horror that lies beneath it. It's what EJB should have been to begin with.

Of course, the new Simplified APIs are like a nice suit on a putrefied corpse. Fortunately, there's nothing at all stopping you from replacing the corpse with something a bit less smelly. That is, you can do a clean-slate implementation of the new APIs with literally none of the old EJB stuff under it, and at least some of the EJB vendors are moving in that direction, at least as an option. Clean-slate implementations will not be at all compatible with existing EJB code, but they will be faster, more reliable and a lot smaller.

If you're doing any EJB programming, I'd advise you to use the new APIs for all of your new work, and gradually refactor your existing code to eliminate all mention of the old APIs.

The new Persistence APIs flush out the system. Entity beans are now gone. Instead, you have JDO/Hibernate-style persistent objects. As with the EJB APIs, everything can be done with a few simple annotations (@onetomany, @manytomany and so forth). No more complicated XML configuration files!

On the O/R-mapping front, you can accept the compiler's notion of what the SQL can look like, you can use an annotation to specify the SQL as part of the Java class definition, or you can specify the SQL in a relatively simple XML file. The JDO query language has also been improved considerably, now supporting such things as inner and outer joins and nested queries.

All of the above are implemented in Sun's Glassfish app server, available from https://glassfish.dev.java.net/public/users.html.

These changes are welcome and long overdue. Now we can move forward with a set of simple APIs that will make hard tasks easy to do. ▮

Allen Holub is an architect, consultant and instructor in C/C++, Java and OO Design. Reach him at www.holub.com.

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The Rise of Virtual Labs

Virtualization—the ability to run multiple hosted environments on the same hardware platforms—is a tool whose newfound popularity in IT is due to its longtime use by software developers.

A curious aspect to this affection is that the primary vendors of virtualization tools—VMware and Microsoft—did surprisingly little to make use of this enthusiasm or extend their tools for development environments. Instead, third parties have stepped into the breach. Two companies—Texas-based Surgient and a California-based start-up named Akimbi Systems—offer product suites that enable developers to quickly set up and run virtualized configurations. Recently, I have been examining their offerings.

Both companies focus on lab setups. Technically, the labs don't have to be oriented toward software development, but in practice many of them are. Much of the remainder is used for testing and evaluating software.

Both vendors offer a means to easily set up and run configurations involving virtual machines (VMs) running on multiple servers. They provide tools to quickly configure new VMs and add them to (or remove them from) running configurations. Finally, they offer the critical ability to take snapshots of active configurations. This is a central, if not *the* central, feature of these packages.

It works like this. Let's say you're running a Java app server on one VM, a database on another, and three client VMs each running load simulators. When you reach 256 simultaneous connections, an exception occurs in the processing. So, you fire up this configuration and take a snapshot of the configuration as you reach the crucial threshold.

Integration Watch

The snapshot can be sent to QA engineers for their examination. They can copy it many times so as to always have a fall-back snapshot to re-create the problem. And they can then fire up the snapshot and start stepping through the execution and tracing the exception. An interesting feature is that the snapshot and the original configuration can be running simultaneously without conflicts. As the snapshots use the same IP addresses and media access control (MAC) addresses as the original VMs, this simultaneous running requires some magic.

In the snapshots, a virtual router is bundled. It performs network-address translation (NAT) on the configuration, so that to the outside world there is no conflict of IP addresses; while within the configuration, the integrity of the original IP addresses is maintained. For external purposes, each network adapter's MAC address is also remapped.

Akimbi adds elegance to this process by having secured its own vendor-specific MAC prefix from which these new MAC addresses are drawn. This step guarantees that the temporary MAC addresses cannot conflict with other hardware. (A MAC address is generally unique to each network adapter, and is based on organizationally unique identifiers, or OUIs, which are managed by the IEEE and available from the group at comparatively little cost.)

The Akimbi and Surgient products are effective packages for lab contexts.

Surgient has a separate line of products that address a rarely discussed application for which virtualization is tailor-made: education and training. Suppose you want to train your developers to use Ruby on Rails. You might create a VM with the Ruby runtime and needed libraries, the Komodo Ruby IDE, a Web server and a sample database. Then, depending on your lab configuration, you can run the VMs on a host machine, in which case Surgient's VTMS helps with the provisioning.

If the class involves several lab exercises, you might want to move part of the configuration to multiple VMs, so that you can change out the database or the Web server and have students learn configuration of those packages as well.

Surgient also offers a slight modification of this concept for doing demos of software. Salespeople can assemble configurations that are relevant to prospects and deploy them on remote hosts and then dial in to run these tailored demos.

The first generation of virtualization was the mainframe, the second was today's crop of hypervisors from Microsoft, VMware and recently from Xen. Layered on those products are the first generation of virtualization management tools. Topmost are the products that companies such as Akimbi and Surgient are shipping. Look for more tools to appear in this space. In the meantime, start thinking about how virtualization can help at your site. ▮

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Services Rise to the Surface

For 40 years, we've known that successful software design features self-contained modules that do one thing well. In the 1960s, such systems were described as highly cohesive and loosely coupled; in the 2000s, we call them service-oriented. Service-oriented architectures don't increase the abstraction of how we approach systems; they reiterate what we already know: It's good to compose systems from fully functional (and debugged) subsystems.

Discussions of SOAs pay great attention to the presence of the network and its implications for data transport. This is understandable, since spending a few milliseconds transmitting a network message rather than accessing RAM is the same millionfold decrease in performance that sending a piece of paper across the Pacific by container ship bears to a face-to-face conversation. Crippling differences in access time were not unknown in the 1960s either, as anyone with a copy of Knuth's volume on sorting and searching and a memory of tapes, whether magnetic or paper, can attest.

We are at the dawn of the multicore and manycore era (a friend just went to four cores, and I've been spec'ing out a similar system, because my life just doesn't have enough drama without adding water-cooled electronics to the mix). As I discussed in a previous column ("Under Concurrence," Feb. 15, page 32), we are poorly prepared. Service-oriented architecture is one of the few current memes that map into the concerns that will soon begin dominating the technical aspects of software development. Patrick Logan, blogging at patricklogan.blogspot.com, puts it succinctly when he says, "SOA in its best possible interpretation is just reality for tomorrow's programmers."

Windows & .NET Watch

By the time you read this, broad access to a feature-complete beta of Windows Vista is likely to be available. I hedge the statement because, at this point, Windows Vista release dates are about as reliable as those for "Duke Nukem Forever." Even though by all accounts the Vista death march is ending and the operating system is garnering positive early notices, its schedule delays and "resets" are all the testimony needed to say that the challenges for Microsoft's flagship product are only going to increase in the years ahead.

Even if, as PC Magazine said, "not since the summer of '95 has the Windows interface taken such a giant leap forward," ("Why You Want Vista Now!" by John Clyman, May 9) the disappointing truth of Windows Vista is that the underlying architecture has not advanced similarly. Running "linkdump" in the Vista system directories shows all the usual suspects. Refactoring the world's most widely used operating system is a Herculean task ("the Augean stables," the wags will quickly say), but let me venture that "SetTapePosition" could be moved from Kernel32.dll.

I'll take it on faith that backup applications use the Tape API. I'll take it on faith that a transactional backup requires kernel-mode interaction. But, surely, the Tape API need not be part of the surface area of the kernel of the operating system. Conversely, whatever elaborate disk-access juggling is necessary to make backups transactional is surely complex enough to justify dedicated resources.

What transport performance is to network SOAs, resource contention is to concurrent SOAs: both justification and guiding principle. To run quickly in the manycore era, a system, whether OS or application, must be factored so that access to scarce resources (such as, say, tape drives and file volumes) is highly cohesive and loosely coupled.

Evolving Windows toward a concurrent service-oriented architecture suitable to the manycore era is an awesomely large, risk-filled project. To the extent that Longhorn was that project, Windows Vista is a failure, no matter how nice its GUI. I don't begrudge a building its internal trusses and beams, and that performance dictated the thickness of the façade in places was not surprising. What is surprising, though, is how little the core of Vista, supposedly the results of a "bet the company" venture, differs from previous Microsoft operating systems. That C and C++ is used? Not an issue. That the operating system seems as monolithic as ever? Big problem.

SD Times editorial director Alan Zeichick has advocated (or at least mused on the benefits of) a non-backward-compatible Windows: For Microsoft to take a great leap forward, it needs to put everything, including the wrath of some existing customers, on the table. It's too late for Windows Vista to gain anything from such a decision; at this point, any changes in compatibility would just be gratuitous.

The Vista architecture will carry us into the next decade and the threshold of the manycore era. At that point, the operating system will have to change or it will be dramatically ill-equipped to move forward. "Bet the company" was always too dramatic to describe Longhorn/WinFX/Windows Vista. It won't be next time. ▮

Larry O'Brien is a technology consultant, analyst and writer. Read his blog at www.knowing.net.

In Blogs We (Wrongly) Trust

Industry Watch

One recent night, I caught a snippet of NBC's "Late Night with Conan O'Brien" television program. One of his guests was the network's news anchor, Brian Williams, who was describing his newfound fascination with Apple's iPod music player.

Williams described how he'd asked a co-worker what he was listening to on his iPod. The co-worker replied it was a podcast of a program he couldn't listen to earlier—and added that it would be cool if you could actually hear the podcast live as it was happening. Williams, going for the laugh on the comedy talk show, retorted, "Yes, I think they call that radio!"

The news anchor commented on the irony: Even as folks spend all kinds of money on 65-inch plasma screen televisions for their home theater systems, they watch shows on their 2 1/2-inch iPod screens. He said the same co-worker couldn't wait until he could watch video on his iPod as it was happening. "That's called television," Williams noted wryly.

It was a good-natured exchange about the obsessive nature of Americans and their gadgets, but Williams failed to touch on the broader point here.

Before the Internet and wireless gadgets, the only way to reach large audiences was through the mass media—radio, television and newspapers.

Decades ago, to get your message across unfiltered, companies bought ads in those media. But if you didn't have the money to buy ads—perhaps you're an environmental group seeking to get the word out about the shrinking rain forests, or a candidate for political office trying to make a point about your record—you had to go through editors, who would decide if your story was worthy of wide distribution, and if so, how much of it they could fit into a printed news story or a timed television piece. Rarely was an organization's or individual's news announcement run verbatim. More often than not, news releases were tossed aside.

Technology has changed all that. Now, unfiltered news announcements can be posted in full on a corporate or charitable organization's Web site. Garage musicians can record their songs, upload them onto a computer, and distribute them on peer-to-peer networks. Would-be pundits can write to their hearts' content—space is no object in the blogosphere.

While the original benefit of cell phones, handheld devices and iPods was to be able to take information with you, the benefit of Web 2.0—with RSS, wikis and tagging—has been to put the power of a mass medium into the hands of the masses. This is both revolutionary and potentially catastrophic.

For every newspaper columnist like George Will or veteran television anchor like Walter Cronkite, respected journalists who by dint of their years in their trades gained public trust, there are new bloggers and videocast hosts about whom we know very little. Yet more and more, people are trusting their words as the unbiased truth, as we would Will's or Cronkite's, simply because the bloggers and podcasters now have access to the same delivery mechanisms as the old-school journalists. I guess people think that because they can read Bob Woodward online, or in his blog, that by definition, anyone that writes online or in a blog has the credibility of Bob Woodward.

Or perhaps the bigger issue is that readers and television viewers have no faith that what the traditional media are bringing them *is* the unbiased truth, so that in their minds, there is no difference between George Will and a blogger. If that's the case, then I fear for the very future of this society—a future in which corrupt businesspeople and government officials go unchecked because true investigative reporting and journalism is lost in a sea of opinionated, facts-be-damned, "look at me!" blogging and videocasting. This, to me, is the biggest job facing publishers—regaining the public's confidence and trust that the information they are being given is reliable, accurate and impartial.

Meanwhile, encyclopedia publishers employ a veritable army of fact-checkers to ensure the information they put out is accurate. Does Wikipedia use the same standard, or does it assume that the public at large is the army of fact-checkers, who jump in and correct errors they find? Well, what happens if the day I look something up is the day before someone with better knowledge corrects the very entry I relied on the day before? Who's standing at the gate *before* this information gets disseminated over the Internet?

Newspaper and magazine publishers fear this new world. How do we get people to get off the information superhighway at our rest stop, when there is so much traffic and noise out there? Actually, it's a very simple answer. People want information they can trust, that they can rely on as being accurate and impartial. As more unnamed, untrustworthy writers enter the blogosphere, they will actually drive readers back to the traditional publishing sites, where the George Wills and Maureen Dowds—and in our industry the Alan Zeichicks, Peter Coffees and Larry O'Briens—have proven, over years of reporting and analysis, that they are the names you can trust. ▮

David Rubinstein is editor-in-chief of SD Times.

BUSINESS BRIEFS

EARNINGS: Salesforce.com revenues exceeded US$100 million in the first quarter of fiscal 2006 ended April 30, as the company claimed to be the first-ever on-demand business services provider to exceed that total. Total revenues were $104.7 million, an increase of 63 percent on a year-over-year basis and an increase of 15 percent on a quarter-to-quarter basis. GAAP earnings were about break-even, the company reported. Net paying subscribers rose approximately 45,000 during the first quarter, bringing the total number of reported subscribers to about 444,000. This represents an increase of 66 percent from the first quarter of the prior year and an increase of 11 percent from the prior quarter, the company said . . . **Compuware**'s revenues increased nearly 87 percent from a year earlier, to US$1.2 billion in fiscal year 2006. Net income was $143 million, or 37 cents per share, compared with net income of $76.5 million, or 20 cents per share, in 2005 . . . For the first quarter, **TenFold** reported revenues of US$599,000 but operating and net losses of $1.9 million each. "While obviously our financial performance is not acceptable, we did make significant progress in the quarter reconnecting with our past customers and building our pipeline with new prospects. I am encouraged by the acceptance of our technology in the SOA world by our customers and prospects and look forward to demonstrating progress in closing business in Q2 with new and continuing customers," said Robert W. Felton, TenFold's chairman, president and CEO . . . **BEA Systems'** first-quarter 2006 revenues were up 15 percent from last year, to US$323.2 million, driven in part by the divestiture of minority investment in certain private companies and expensing of employee stock options. First-quarter license fees were $132.4 million, up 14 percent from a year ago. BEA reported a GAAP operating profit of $33.6 million, down from $48.5 million a year ago. GAAP first-quarter net income was $35.3 million, up slightly from $34.1 million a year ago . . . Business integration software provider **Magic Software** reported revenues of US$15.27 million for first-quarter 2006 ended March 31. Software sales grew 30 percent to $4.85 million in the quarter, compared with $3.73 million in the fourth quarter of 2005. The company posted a net loss of $169,000 for the quarter, a better performance than the net loss of $1.99 million in the fourth quarter of 2005. Revenues from maintenance and support increased, while consulting decreases slightly. ▮

CALENDAR OF EVENTS

Enterprise Planning & Architecture Strategies — June 19-20
San Diego
GARTNER
www.gartner.com/2_events/conferences/epas062.jsp

Application Integration & Web Services Summit — June 19-21
San Diego
GARTNER
www.gartner.com/2_events/conferences/apn16.jsp

Enterprise Architecture Summit — June 21-23
San Diego
GARTNER
www.gartner.com/2_events/conferences/ea4.jsp

VSLive — June 21-24
Las Vegas
FAWCETTE TECHNICAL PUBLICATIONS
www.ftponline.com/conferences/vslive

Better Software Conference — June 26-29
Las Vegas
SOFTWARE QUALITY ENGINEERING
www.sqe.com/bettersoftwareconf

Web Design World — July 10-12
Seattle
FAWCETTE TECHNICAL PUBLICATIONS
www.ftponline.com/conferences/webdesignworld/2006/seattle

Architecture & Design World — July 17-20
Chicago
CMP MEDIA
www.sdexpo.com

Agile 2006 — July 23-28
Minneapolis
AGILE ALLIANCE
www.agile2006.com

Open Source Convention — July 24-28
Portland, Ore.
O'REILLY MEDIA
conferences.oreillynet.com/os2006

SIGGRAPH — July 30-Aug. 3
Boston
ACM SIGGRAPH
www.siggraph.org/s2006

SCO Forum — Aug. 6-9
Las Vegas
SCO GROUP
www.sco.com/2006forum

Worldwide Developers Conference — Aug. 7-11
San Francisco
APPLE COMPUTER
developer.apple.com/wwdc

LinuxWorld Conference & Expo — Aug. 14-17
San Francisco
IDG WORLD EXPO
www.linuxworldexpo.com

EclipseWorld 2006 — Sept. 6-8
Boston
BZ MEDIA
www.eclipseworld.net

Software Test & Performance Conference — Nov. 7-9
Boston
BZ MEDIA
www.stpcon.com

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